DOCUMENT RESUME

ED 230 132 HE 016 196

AUTHOR Odutola, Adeniji A.
TITLE A Longitudinal Study of the Effects of Academic, Demographic, and Financial Aid Factors on Retention for the Freshman Class of 1974 at the Florida State University.
PUB DATE Aug 83
NOTE 139p.; Ph.D. dissertation, Florida State University.
PUB TYPE Dissertations/Theses - Doctoral Dissertations (041) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS *Academic Persistence; *College Freshmen; Family Income; *Federal Aid; Grade Point Average; Higher Education; Institutional Research; School Holding Power; *State Universities; *Student Characteristics; *Student Financial Aid
IDENTIFIERS *Florida State University

ABSTRACT

Factors related to retention of federal financial aid recipients in the 1974-1975 freshman class at Florida State University were studied. For 615 aid recipients, attention was directed to the type of federal aid received, amount of money awarded, family income, ethnicity, age, sex, and academic ability. Major findings include: high school grade point average (GPA) was significant in predicting persistence to graduation; the undergraduate GPA was the most important academic variable in predicting student retention; recipients between the ages of 16 and 22 persisted to graduation at a higher rate than did older students; more females persisted to graduation than did males; the ethnicity of a student did not significantly affect persistence; students from higher family income brackets graduated to a greater extent than students from lower income families; the grant package was the most important financial aid type in explaining student retention, followed by the loan plus grant package; recipients of the loan package and the loan plus college work study program exhibited higher attrition rates; and the amount of aid awarded was related to retention. A literature review, a statement of the research problem and conceptual framework, and a extensive bibliography are included. (Author/SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED230132

THE FLORIDA STATE UNIVERSITY

COLLEGE OF EDUCATION

A LONGITUDINAL STUDY OF THE EFFECTS OF ACADEMIC, DEMOGRAPHIC, AND FINANCIAL AID FACTORS ON RETENTION FOR THE FRESHMAN CLASS OF 1974 AT THE FLORIDA STATE UNIVERSITY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Adeniji A. Odutola

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

by

ADENIJI A. ODUTOLA

A Dissertation submitted to the
Department of Educational Leadership
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Approved:

Maurice L. Litton
Professor Directing Dissertation

M. Phillip Seaman

Marion Neel

Department Head

August, 1983

Copyright © 1983 Adeniji A. Odutola
All rights reserved.

HE016196

A LONGITUDINAL STUDY OF THE EFFECTS OF ACADEMIC, DEMOGRAPHIC, AND FINANCIAL AID FACTORS ON RETENTION FOR THE FRESHMAN CLASS OF 1974 AT THE FLORIDA STATE UNIVERSITY

(Publication No. _____)

Adeniji A. Odutola, Ph.D
The Florida State University, 1983

Major Professor: Maurice L. Litton, Ed. D.

The purpose of this study was to examine the federal financial aid recipients in 1974-75 freshman class at the Florida State University, to determine if the factors of type of federal financial aid package received, amount of money awarded, socio-economic status (family income), ethnicity, age, sex, and academic ability were related to retention. A population of 615 federal financial aid recipients was used. Data were collected from the students' permanent records maintained by the Florida State University. Multiple regression analysis was the basic statistical technique used to analyze collected data. Basic correlations and descriptive statistics were also presented.

The major findings of the study were: (1) high school grade point average was significant in predicting

persistence to graduation; (2) the undergraduate grade point average was the most important academic variable in predicting student retention; (3) recipients between the ages of sixteen and twenty-two persisted to graduation at a higher rate than older students; (4) more females persisted to graduation than males; (5) the ethnicity of a student did not exhibit any statistical significance in persistence to graduation; (6) students from higher family income brackets graduated more frequently than students from lower income families; (7) the grant package was the most important financial aid type in explaining student retention followed by the loan plus grant package, while recipients of loan package, and loan plus college work study program exhibit a higher attrition rate than recipients of other financial aid packages; (8) the findings of this research support the conclusion that grant should be a major proportion of any financial aid type if retention is a major part of the institution's policy; (9) the amount of aid awarded was statistically related to retention; (10) the rate of retention over a five academic year period was 38.54 percent.

DEDICATION

The writer dedicates this dissertation
in gratitude, admiration and love
to his mother, the late Victoria Odutola;
to his father, Mr. Gabriel Gbadebo Odutola;
and to his brother, Dr. Adedeji A. Odutola.

ACKNOWLEDGEMENT

The writer would like to express his appreciation and admiration to those who have contributed significantly to the successful completion of this study.

To Dr. Maurice L. Litton, major professor, for guidance, patience, support, and encouragement provided during the course of the doctoral program.

To the doctoral committee, Dr. Charles Adair, Dr. Charles Jones, Dr. Phillip Leamon, Mr. Edward Marsh and Dr. Marion Neil for their guidance in the preparation of this dissertation.

To Mr. Edward Marsh, Director of Financial Aid Office; Mr. Max Carraway, and Mr. W. E. Turner, Registrar's Office; Mrs. Ilona Turrisi, Director of Budget and Analysis, Florida State University, for providing the necessary data needed.

To Mrs. Mary Lou Richey for her patience and typing services.

To my friends, Dr. Abiola Akintola, Dr. Alex Donkor, Dr. Rose Ekpenyong, Dr. Asghar Nazemzadeh, Dr. Mehdi Nazemzadeh, Miss Theresa Zannu, Dr. Delcine Townes and Dr. Munir Choudhary for their support and love.

TABLE OF CONTENTS

ABSTRACT		ii
DEDICTATION		iv
ACKNOWLEDGEMENT		v
LIST OF TABLES		ix
LIST OF FIGURES		xi
Chapter		Page
I	INTRODUCTION	1
	Introductory Statement	1
	Statement of the Problem	5
	Significance of the Problem	5
	Organization of the Study	7
II	REVIEW OF RELATED LITERATURE	8
	Introduction	8
	Student Demographic Factors	9
	Student Academic Factors	17
	Student Financial Aid Factors	21
	Summary of the Review of Related Literature	33
III	CONCEPTUAL FRAMEWORK	36
	Assumptions	39
	Delimitations	40
	Limitations	40

Chapter		Page
	Hypotheses	40
	Definition of Terms	42
IV	METHODOLOGY	44
	Population	44
	Variables	44
	Data Collection	45
	Statistical Analysis	46
V	PRESENTATION AND ANALYSIS OF DATA	48
	Test of Hypotheses for Academic Variables	49
	Summary	57
	Test of Hypotheses for Demographic Variables	57
	Summary	57
	Financial Aid Variables	57
	Test of Hypotheses for Financial Aid Variables	67
	Summary	71
	Regression Models	72
	Rates of Attrition and Retention for a Five Academic Year Period	83
VI	SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	85
	Summary	85

Chapter	Page
Conclusions	91
Implications	93
Recommendations	93
REFERENCES	94
APPENDICES	111
A. Supplemental Tables and Analyses	112
B. Letters	119
VITA	123

LIST OF TABLES

TABLE		PAGE
1.	Test of Ho3 for a Four Academic Year Period	52
2.	Test of Ho4 for a Four Academic Year Period	54
3.	Test of Ho5 for a Four Academic Year Period	56
4.	Test of Ho6 for a Four Academic Year Period	59
5.	Distribution of Aid Recipients by Ethnicity	60
6.	Test of Ho7 for a Four Academic Year Period	61
7.	Test of Ho8 for a Four Academic Year Period	63
8.	Type of Financial Aid Package Awarded in a Four Academic Year Period	66
9.	Test of Ho9 for a Four Academic Year Period	69

TABLE PAGE

10. Test of Hol0 for a Four Academic Year Period..... 71

11. Regression Equation for 1974-75 Academic Year..... 74

12. Regression Equation for 1975-76 Academic Year..... 76

13. Regression Equation for 1976-77 Academic Year..... 78

14. Regression Equation for 1977-78 Academic Year..... 80

15. Retention for a Five Academic Year Period..... 84

16. Attrition over a Five Academic Year Period..... 84

LIST OF FIGURES

FIGURE		PAGE
1.	Getzels and Guba's Social System.....	38
2.	Modification of Getzels and Guba's Model to Explain Attrition and Retention.....	38

CHAPTER I

INTRODUCTION

Introductory Statement

Student attrition and retention have long been familiar themes in institutions of higher education but during the decade of the sixties and the early part of the seventies, post-secondary educators were little concerned with student retention. Lenning and others (1980) contended that there were two reasons for this:

-The first was that institutions had more students than their faculty and facilities could handle.

-The second reason involved a philosophical interpretation of equal education opportunity and the maintaining of academic standards. Many felt that they fulfilled their obligations for equal educational opportunity if students had easy access to the institutions. There was also an assumption that academic standards would suffer if special considerations were given to any particular group of students, and therefore all were judged by the same criteria. As a result, it was not unusual to have more than 50 percent dropout before graduation. (p.4)

1

Iffert (1957), Summerskill (1962), and Eckland (1964) contended that about one-third to one-half of all college students did not finish their education (Iwai and Churchill, 1979, p. 126). Sanford (1980) showed that thirty percent of entering freshmen left their original institution during the first year, another twenty percent left during the second year; and an additional ten percent left during the third year, resulting in a cumulative attrition rate of sixty percent over four years (p. 26). Noel (1977) and Campbell (1980) indicated that forty percent of all freshmen would not graduate. In a study conducted at the California State University, Northridge (CSUN), the rate of attrition over four years was reported to be seventy percent (Newlon and Gaither, 1980, p. 238). In a 1973 speech, Sidney P. Marland, United States Commissioner of Education, affirmed that on a national basis, only thirty-three percent of the students in higher education eventually graduate (Johansson and Rossman, 1973). Cope (1978) estimated that more than forty percent of undergraduate students in the eighties would not earn degrees (Habley, 1981, p. 45).

It became apparent in the early part of the 1980s that institutions of higher education must develop new marketing strategies to attract new students because of the decline in student enrollment. Noel (1977) indicated that there would be a dramatic decline in high school

graduates by 1985. "This past fall (1975), for the first time in 24 years, we had a decline in college enrollment throughout the nation" (p. 744). He further asserted that if higher education was going to continue to be a growth industry, it must attract new constituents. Lenning and others (1980), and Campbell (1980) predicted a decline in enrollment of twenty-six percent by 1992. The Carnegie Council on Policy Studies in Higher Education (1980) affirmed that the most dramatic feature of the next twenty years was the probability of enrollment decline after more than three centuries of steady increase (p. 32).

As student enrollment continues to decline, the cost of higher education continues to increase. Finn (1978) postulated that higher education was expensive, and if students had to pay full cost, many would not be able to attend institutions of higher education. He further indicated that colleges and universities spent an average of $3,400 to teach each student in 1977-78; and a student's non-institutional expenses (for room, board, transportation, books and the like) averaged an additional $1,900 to $2,300 without such personal sacrifices as the income a person foregoes when (s)he attends college rather than holds a job (p. 45). The report of the Carnegie Council on Policy Studies in Higher Education (1980) showed that educational expenditures per student averaged about $2,500 in the 1960s and increased slightly to over

$3,000 in the 1970s (p. 319).

Newlon and Gaither (1980), and Howell and others (1980) pinpointed that with a decline in student enrollment projected for the eighties, attrition and retention are of necessity becoming more compelling concerns for higher education. Demitroff (1974) summarized all the aforementioned points when he said:

> No longer is there an unending supply of new students. No longer can budget increases be defended on the basis of increased enrollment. No longer are we concerned with growth beyond capacity, but rather with maintaining enrollment to the capacity for which the institution was built. (p. 534)

With a steady increase in the cost of higher education, more students will now apply for federal student financial aid programs with the prospect of fewer funds. Hook (1982) showed that the proposed cuts range from about ten percent to more than fifty percent from one program to another; and funds will not be provided for Supplemental Educational Opportunity Grants (SEOG), National Direct Student Loans (NDSL), and State Support Incentive Grants (SSIG). The effects on student retention are not really known; however, there is a high probability that current federal proposals will increase student attrition rates.

Statement of the Problem

The purpose of this study was to examine financial aid recipients in the 1974 freshman class at The Florida State University, to determine if the factors of type of federal financial aid package received, amount of money awarded, socio-economic status (family income), ethnicity (race), age, sex, and academic ability were related to retention.

Significance of the Problem

With the decline in student enrollment and steady increase in the cost of higher education, attrition and retention are among the foremost current issues confronting higher education today.

As early as 1958, the goals of the federal student financial aid programs were reported by many writers to be: access to higher education, equal opportunity, institutional choice and persistence. Financial aid has been very instrumental in bringing many students into higher education; thus, the intent of Congress that financial aid should not be a barrier to any student who wants to avail himself or herself of higher education has been fulfilled by careful implementation of the law.

A major purpose of this study, therefore, is to ascertain the effects of financial aid packages on student retention. A study that examines student academic, demographic and financial aid factors in relation to retention

at Florida State University will help the financial aid office to know which financial aid programs are significantly related to persistence.

This study, therefore, is intended to answer questions that researchers and educators have concerning the relationships of academic ability, demographic and financial aid factors on student retention, and to stimulate further research. Results should be generalizable to other universities in Florida and indeed to any college or university that services a similar clientele.

Organization of the Study

The introductory statement, statement of the problem, and the significance of the study are presented in Chapter I. The review of related literature is presented in Chapter II. Chapter III consists of the conceptual framework, assumptions, delimitations, limitations, hypotheses, and definition of terms. Chapter IV contains the research methodology: population, variables, data collection and statistical analyses. The presentation and analyses of data are discussed in Chapter V, while the summary, conclusions, implications, and recommendations for further study are presented in Chapter IV.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Student attrition in postsecondary education has remained high for more than sixty years (Bean, 1979). Astin (1977) contended that only half of freshmen entrants earn a baccalaureate degree within four years (p. 107). The U.S. Department of Health, Education, and Welfare reported that only fifteen percent of the graduating high school classes of 1972 received a college degree within four years (Ramist, 1981, p. 7). Huber (1971) showed a thirty percent graduation rate at a Southeastern university, while an analysis of each freshman class from 1957 through 1967 resulted in only a fifteen percent graduation rate in four years. He made his point clearly, when he said that the president of a large university in the Midwest, as part of a welcome speech to freshmen, said, "Look at the person on your right and left. Four years from now only one of you will still be here" (p. 20). Cope (1968), Iffert (1957), Marsh (1966), Panos and Astin (1968), Summerskill (1962), and Trent and Ruyle (1965) have shown attrition rates of twelve percent to eighty

percent from one institution to the other (Zaccaria and Creasar, 1971, p. 286).

The review of related literature will examine studies that have shown the effects of student demographic, academic, and financial aid factors on student attrition and retention.

Student Demographic Factors

The demographic factors to be examined include: age, sex, ethnicity, and socio-economic background (family income).

Age

Eaton (1979) showed that age is associated with success and failure in higher education not only in the United States but also in the United Kingdom and Australia. In Australia, several writers have compared the withdrawal rates of older and younger students. According to Eaton (1979), Childs (1974), Huggan (1977), Joseph (1977), Leadbetter et al., (1979), Roger (1976), and VanHelden (1975) found that older and younger students had similar withdrawal rates, and in some cases older students had slightly lower rates of withdrawal. Bowker et al. (1979), Mortimore and Bennett (1978), Sheldrake (1975), and Williams and Ainsworth (1977) also showed that the older students are more likely to withdraw for non-academic reasons than younger students (Eaton, 1979, p. 11).

Astin (1975) indicated that age is related to student attrition. He affirmed that older students, especially older women, are more likely to drop out than traditional students. His finding is consistent with Newman's (1965), and Trent and Medsker's (1967), who reported a positive relationship between age and dropping out (p. 44). Slark (1978) found in her study that over sixty percent of those students under twenty years of age persisted. Zanoni (1980) also found that twenty-three year old students and older had a higher dropout rate than younger students (p. 19)

Edwards (1981) reported that dropouts were generally younger than persisters. Campbell (1980) showed that ninety-seven percent of dropouts were between the ages of seventeen and nineteen (p.7).

Howell and others (1979), and Kohen and others (1976) indicated that age is not significant in causing attrition. Green (1980) found age to be negatively related to persistence for students in regular academic programs and positively related for those in developmental programs. She contended that older students are more certain of their goals and have a more positive image of the college. Lenning, Sauer, and Beal (1980) contended that though age is one of the major reasons students give for dropping out, it is unrelated to the actual dropout rate (p. 18).

Sex

Pedrini and Pedrini (1978) concluded that sex was not a viable distinguisher of non-persisters and persisters; however, more research is needed to explain the relationship between sex and student retention (p. 237). In a study on the characteristics of persisters and non-persisters at Old Dominion University, Howell and others (1979) found that sex was not a primary variable in determining student retention or attrition, but becomes more significant when other variables are taken into consideration (p. 16).

Selby (1973) found that only fifty-eight percent of females persisted, while seventy-nine percent of males persisted. Slark (1978) found the rate of persistence for females to be 50.9 percent and fifty-eight percent for males. Sanford (1980) reported 64.6 percent rate of persistence for men and 63.6 for females (p. 26). Brabant and Garbin (1978) indicated that males demonstrated greater persistence than females. They reported sixty-five percent for males and 59.9 percent for females (p. 30). Eaton (1979) indicated that men tend to finish their degree more often than women in North American universities. On the other hand, more women tend to be voluntary withdrawals than men (p. 7). Overseas findings have indicated that sex may be a significant intervening variable in student

persistence. Sheldrake (1976) reported a higher persistence rate for men, while Watkins (1976) found the opposite (Eaton, 1979, p. 14). Newlon and Gaither (1980) and Zanoni (1980) contended that males in general revealed a more positive persistence rate than females.

On the other hand, many writers have found women to have a higher persistence rate than men. Astin (1975) indicated that women are more likely than men to finish their baccalaureate degree in four years (p. 12). McDermott and Lichtenstein (1974) found that females at Hofstra University had higher graduation (sixty-two percent and fifty-eight percent) than males. They also found that women with a grade point average of 2.00 or better withdrew at a higher rate than men in the same group; and men are more often dropped for poor scholarship. The range of percentages for women dropped for poor scholarship was eleven to eighteen percent, while the range for men was twenty-seven to thirty percent (p. 5). Stoner (1979) and Thompson (1980) also found that females tended to graduate earlier or on schedule more frequently than men.

Ethnicity

Williams (1975) concluded that there is a significant relationship between ethnicity and retention. Selby (1973, 1970) found that no significant differences existed

in the persistence of Black and white students. Kohen and others (1976, 1978) affirmed that race can not exhibit any significant relationship on student persistence independent of other variables. Astin (1973) indicated that Jewish students have a higher rate of persistence than non-Jewish students. He further asserted that once blacks were matched with white students in the same comparable academic background, there were no differences in their completion rates; but this is not true for the Mexican American and Puerto Rican students (p. 303).

Pedrini and Pedrini (1978) concluded that race was not significant in student attrition or persistence. They found that Black men and Black women with below average grades dropped out less frequently compared to whites of comparable ability (p. 237). Astin (1977) indicated that though the persistence rate for Blacks is lower than for whites, Black women evidenced a higher persistence rate than their white women contemporaries (p. 218). However, Tsai and Perry (1975) observed that for the Black students, being a woman increases college grades (p. 10).

In a study conducted at Michigan State University, from Fall 1973 to Fall 1978, Rosenthal (1980) reported that at the end of Summer 1979, whites, American Indians and other Hispanics had the highest completion rates; Asians and Blacks constituted the middle group while the

Chicanos had the lowest completion rate (p. 1). In a comparative study of students' survival rates by race from 1973-76 at the University of South Carolina, Fidler and Ponder (1977) found that Black survival rates were consecutively higher than white rates for each of the three years studied. Black survival rates varied from 81.6 percent to eighty-four percent while whites' rates varied from 74.1 percent to 75.6 percent (p. 7).

Lenning, Sauer and Beal (1980) found that Spanish speaking students drop out more frequently irrespective of variables controlled. Asian and Jewish students drop out less frequently, while American Indians and Blacks only appear to drop out more frequently when appropriate variables were not controlled (p. 18).

Socioeconomic Background

Peng and Fetters (1977) concluded that socioeconomic level correlates with student retention because of its effect on students' pre-college environment (Lenning, Sauer, and Beal, 1980, p. 1). Astin (1975) showed that if other variables are ignored, family income has a direct relation to dropping out (p. 35). Astin (1964), in surveying 6,600 National Merit Scholars of 1957, found that dropouts came from lower socioeconomic background (Selby, 1973, p. 1). Halstead (1974) indicated that proportionately more high school graduates with the lowest aptitude are from lower income families, and more of those with highest aptitude

are from families with high income (p. 175). Furthermore, he showed that there is only a twenty-five percent probability that a student from the former group will enter college and an eighty-six percent probability for the latter group (p. 177). He concluded that "socioeconomic factors have a negative effect on college attendance" (p. 178)

In a study at Purdue University, Notestine (1969) found that the socioeconomic level of the home is germane to whether a student persists or not. In a comparative study of academic achievement and retention rates of Black students in two predominantly white institutions, Turner (1977) found that socioeconomic status influenced academic achievement and retention rates of Black students at both San Jose State and Stanford University. On the other hand, Kohen (1976) affirmed that socioeconomic status has no significant relation to dropping out. Astin (1973) also showed that the way a student pays his tuition makes a difference, but not the amount of money his parents have (p. 304).

West (1963) showed that "in 1960 one family in five had an income of less than $3,000 and another one in five, between $3,000 and $5,000" (p. 97). He affirmed that there are economic barriers and particularly socioeconomic barriers which deprive competent students of postsecondary education and deprive the nation of their best services.

The question is not: Should these barriers be removed? The question is: How should the barriers be reduced (p. 125)?

Summary

The studies examined above have shown complexities in the research findings of the effect of student demographic factors on student attrition and retention. Several researchers have also indicated that these factors cannot be tested in isolation of other variables.

Age has been found to be related to failure or success in postsecondary education in the United States, United Kingdom, and Australia. Overseas researchers have found sex to be a significant intervening variable in student persistence. Most researchers tended to believe that women complete a baccalaureate degree faster than men. Women also drop out more voluntarily than men; while men drop out more for poor scholarship than women.

In case of ethnicity, Jewish students have a higher persistence rate than non-Jewish students. Generally, Blacks evidence a lower persistence rate than whites, but when matched on the same academic ability with white students, no difference exists. However, Black women have a higher persistence rate than their white women contemporaries. Chicanos and Spanish speaking students have the lowest completion rate irrespective of variables controlled.

There is general consensus among researchers that students from lower socioeconomic background have a lower rate of persistence than students from high socioeconomic background.

Student Academic Factors

The academic factors to be examined are: high school grades, college admission tests (American College Test - ACT, Scholastic Aptitude Test - SAT), and college grades.

High School Grades

Morrisey (1971) indicated that for the past thirty or forty years research has shown high school grades to be the best predictor of college grades (p. 279). Lenning and others (1980) affirmed that high school grades have been found to be positively related to student retention (p. 18). On the other hand, Thompson (1980) contended that there was a high correlation between high school grades and student attrition (p. 5).

Astin (1975) contended that it is not surprising that high school grades are consistent in predicting student attrition. He presented data that showed students' chances of either dropping out or stopping out of college increased as their high school grades decreased (p. 31).

In a study conducted at the University of Tennessee from 1968 to 1973, Stoner (1979) found high school grade point average to be the single best predictor of graduation

from the institution. Perry (1981) also found that high school grade point average was significant in predicting college performance (p. 54). Howell and others (1979) found that a larger percent of persisting students at Old Dominion University graduated in the upper percentiles of their high school class (p. 31). Bennett (1978) found that those who graduated from Freed-Hardeman College had higher high school grades. On the other hand, Campbell (1980) indicated that seventy-eight percent of persisters reported a high school grade average of B or better, but seventy-nine percent of dropouts reported the same grade average (p. 7).

College Admission Tests (ACT, SAT)

Astin (1973, 1975) contended that ACT and SAT are very effective in distinguishing persisters and non-persisters; but the predictive strength of these tests is not as high as high school grades. This difference is particularly true for Black students.

Ashbaugh, Levin and Zaccaria (1973) concluded that the composite ACT score seems to account for the persistence of women but not for men (p.65). Pedrini and Pedrini (1977) found that students with below average grades had lower ACT scores than students with average or above average grades. In 1978, however, they reported that ACT scores did not seem to contribute to

student attrition or persistence (p. 237).

Coker (1968) found that persisting women had higher mean scores on English and Social Science scales of ACT than persisting men; while persisting men had higher mean scores on Mathematics and Natural Science than persisting women. He also reported that there were no significant differences in the ACT composite mean scores for persisting men and women, while there was for non-persisting men and women (p. 19). Turner (1979) found ACT scores to be effective in predicting graduation from the University of Tennessee.

Sanford (1981) indicated that SAT scores are related to persistence in college (p. 20). Perry (1981) reported a high correlation between high SAT scores and high college grades (p. 56). Notestine (1969) concluded that in the schools of humanities, social science, and education at Purdue University, persisters had the highest SAT verbal scores while non-persisters had the lowest SAT verbal and mathematics scores. Ramist (1981) showed that the freshmen year dropout rate ranged from nine percent for those scoring six hundred or above on SAT mathematics to twenty-seven percent for those scoring below three hundred (p. 13).

College Grades

Astin (1975, 1977), Eaton (1979), and Lenning and

others (1980) have indicated that the single most important variable in predicting student persistence is the undergraduate grade point average. In a study of dropouts, stopouts, and persisters, Bennett (1978) found that those who graduated had higher college grades than those who did not. Ramist (1981) contended that several studies have shown a high correlation between college performance and attrition, even when other variables are controlled (p. 14).

Astin (1975) showed that among students with A or A+ averages, one in every five drops out. He continued that grades in the B average (GPA between 2.75 and 3.24) have the highest correlation effect on persistence, especially among Black students. He affirmed, however, that a large number of students who showed great promise for college dropped out because of grades; while those who did not exhibit the potential for academic succeed got high grades and persisted. Astin concluded that "these imperfections in the ability to predict who will succeed in college suggest that academic administrators would be well advised to examine the importance of grades as a motivating factor" (p.101).

Summary

Researchers have reported conflicting findings on the effect of academic factors on student persistence. High

school grades have been found by several researchers to be an excellent predictor of college performance. Aptitude tests (ACT, SAT) while good, do not have the predictive strength that high school grades exhibit and there is some indication that SAT scores are a better predictor of college performance than ACT scores. Students with a B average of college grades seem to have the highest persistence rate, especially among Black students.

Student Financial Aid Factors

The period from 1958-1972 was a period of growth in federal assistance programs to higher education. The increasing number of Americans seeking entrance into institutions of higher education, the rising cost of higher education and the growing feeling of many educational organizations and the public at large, that lack of money should not be a barrier for any American who wants to continue the search for knowledge beyond high school led to the enactment of many federal financial assistance programs. In 1979, the Secretary of the Department of Health, Education, and Welfare, Joseph A. Califano, Jr., stated in one of the hearings on the reauthorization of the Higher Education Act of 1965 that:

> . . .this nation is on the threshold of achieving the goals that all qualified students will have the financial means to obtain a Bachelor's Degree. The challenge for higher education is to protect and enhance quality while simultaneously ensuring

equal opportunity. (Bureau of Student Financial Assistance Bulletin, May 1979, pp. 9-10)

Financial Assistance

Astin (1975) indicated that undergraduate students pay for their costs through one or more sources: family (parents, spouse), scholarship, loans, savings and work.

Since financial factors are among the reasons most often cited by non-persisters, Astin (1975), Cope and Hannah (1975) and Lenning and others (1980), have examined the effects of financial aid on student attrition and retention. Jensen (1980) in examining the impact of financial aid on persistence in college concluded that financial aid had a small positive effect of persistence, while the denial of it to students from high socioeconomic background had a limited negative effect on persistence (p. 16). Longanecker and others (1980) showed that equal educational opportunity as measured by educational attainment is not being achieved by the federal financial aid programs. Students from low income families are less likely to attend college and persist if they do (p. 3).

In analyzing the National Longitudinal Study data for the class of 1972 by a log-linear model, Fetters (1977) concluded that financial aid correlated with non-persistence in college. In analyzing the same data by multiple regression, Peng and Fetters (1978) concluded that neither

scholarship nor loans are related to non-persistence (Ramist, 1981, p. 19).

Silver (1978), in examining the effects of financial aid awards on persistence for the freshman class of 1975 at North Greenville College, found that a larger percent of aid recipients (53.7 percent) completed four semesters of work than did non-recipients (28.6 percent) (p. 23).

In a comparative study on academic performance and financial aid between financial aid recipients and non-recipients at two selected public two-year community colleges in Southern California, Jones (1978) found that financial aid recipients completed more college credit than did nonrecipients. He also reported that financial aid recipients had the same or better grade point average than non-recipients (p. 59).

Looking at the effect of financial aid on student persistence did not answer many questions. In this light, many researchers have also tested the effect of the amount of aid awarded on student attrition and retention.

Amount of Financial Aid Awarded and Persistence

Krieger (1980) examined the relationship between federal financial aid packaging and retention for the freshman class of 1974-75 at Troy State University. He concluded that of all the variables examined, the amount of money was the most significant financial aid factor in retention. He

reported that "students receiving the largest amount of aid persisted longer" (p. 115).

In determining the effect of amount of aid awarded, Silver (1978) divided the recipients of financial aid in the freshman class of 1975 at North Greenville College into five groups depending on the amount of aid awarded. The first group was awarded less than $1,000; the second group, $1,000 to $1,999; the third group, $2,000 to $2,999; the fourth group, $3,000 to $3,000; and the fifth group $4,000 or more. She found that the persistence rate of completing four semesters was highest for recipients in groups four (88.9 percent) and five (88.2 percent), while it was lowest for recipients in group one (twenty-four percent) (p. 25).

Lenning and others (1980) concluded that the amount of aid was related to student persistence. They reported that large amounts of scholarships and grants increase persistence, while large amounts of loans increase attrition (p. 27).

Some researchers have also reported a negative correlation between the amount of aid awarded and student persistence. Baber and Caple (1970), in examining the persisters and non-persisters of Educational Opportunity grant recipients, found that the amount of aid awarded was not sufficient to distinguish between persisters and non-persisters (p. 118). Selby (1973) also found that Black male, white male and white female recipients persisted regardless

of the amount of aid awarded (p. 39). Jensen (1980) also showed that in:

> . . . an initial analysis of the relationship between amount of aid per semester and persistence reveals a zero-order correlation of -.108 and a slope coefficient of -.00066. This bivariate correlation indicated increasing amounts of aid per semester are related to decreases in persistence. Thus, while aid per semester appears to be negatively related to semester attended; it is not a significant factor in explaining persistence. (p. 17)

Loans

There are two federal loan programs: National Direct Student Loan (NDSL) and Guaranteed Student Loan (GSL). The enactment of the National Defense Education Act of 1958 provided for a federally funded loan program now known as National Direct Student Loan for needy students (Carnegie Council on Policy Studies in Higher Education, 1979, p. 70). The purpose of the NDSL program is to provide low interest loans to institutions of higher education to help needy students pay their educational costs (Federal Register, 1981, p. 2542).

The Guaranteed Student Loan (GSL) was one of the two programs aimed at providing aid for the economically disadvantaged students under the Higher Education Act of 1965 (Carnegie Council on Policy Studies in Higher Education, 1979, p. 70). The purpose of the GSL program is to make available to students loans through private lenders such as banks and credit unions. The loans are insured by the

Federal Government or a State Guarantee Agency, and the eligibility requirement is not based on family income (Five Federal Financial Aid Programs, 1981-82, p. 11).

The next question, therefore, is: What is the effect of these loan programs on student attrition and retention? In a study at Troy State University for the 1974-75 freshman class, Krieger (1980) concluded that the attrition rates for loan recipients were generally the highest when compared to other recipients of other financial aid packages (p. 113).

In a study of college dropouts at Utica College, Blanchfield (1971) reported that recipients of loans did not look favorably at their awards. He also indicated that the rising debt on loans is a problem to these students; thus loan awards are not related to persistence (p. 3).

Astin (1975) showed that loan awards increase a male student's chances of dropping out by six percent. This effect is prevalent whether the loan award is a minor or a major source of paying college cost in all types of institutions. This is more pronounced for students in the lower or middle income levels. For female students using loan as a major source, it increased their chances of dropping out by two percent; while it decreased the rate of dropping out by six percent for those using loan as a minor source. Astin also reported an eight percent reduction in drop out rate for Black students in predominantly white institutions

using loan as either a minor or a major source of paying college cost (p. 15-16).

College Work Study Program (CWS)

The College Work Study program (CWS) was enacted in the Educational Opportunity Act of 1964 and began operation in January 1965. The purpose of the CWS program is to provide part-time employment to students in postsecondary education who need earnings from such employment to meet the ever increasing cost of higher education (Federal Register, 1981). The emphasis of "great" financial need is no longer part of the purpose of this program (Office of Student Financial Assistance, 1980, p. 12).

Krieger (1980) concluded that the college work-study program has a negative effect on student persistence, unless combined with other forms of financial aid programs (p. 113). In a study to determine the effect of part-time employment on the academic performance of freshmen admitted to Michigan State University, Roberts (1979) found that there was no significant difference in the retention rates of students who worked and those who did not.

Using data obtained from a longitudinal national study of a sample of young men attending college in the late 1960s to determine what factors affect persistence at the various years of undergraduate experience, Kohen, Nestle, and Karmas (1978) reported:

> . . . while working inhibits persistence in college, this impediment appears to be greatest for those who work between half- and full-time. This indicates that students working full-time are a heterogenous group, some of whom have extraordinarily high commitment to their educational goals and (perceive) no alternative way of meeting the out-of-pocket expenses of college attendance (p. 249).

In a study of financial aid and student persistence, Astin (1975) showed that the college work study program evidenced a high persistence rate for Blacks, women, and students from middle-income families. He also indicated that participation in this program reduces dropout rates for Blacks and women. He reported eight percent retention for men, eleven percent for women, fourteen percent for Blacks in Black institutions, and nine percent for Blacks in white institutions. He concluded that the positive effects could be attributed to a greater student involvement in college campus life (p. 17). Lenning and others (1980) also showed that working part-time on-campus increased persistence.

Grants

There are two federal grant programs: Educational Opportunity Grant (EOG), now known as Supplemental Educational Opportunity Grant (SEOG), and Basic Educational Opportunity Grant (BEOG), now known as Basic (PELL) grant.

The Higher Education Act of 1965 was aimed at providing aid to economically disadvantaged students under

provisions for Educational Opportunity Grant (SEOG). The SEOG program is not an entitlement (Five Federal Financial Aid Programs, 1981-82).

The BEOG program, now known as the Basic Grant, was authorized under the Higher Education Act of 1965, as amended by the Education Amendments of 1972 and 1976. It is a program that entitles a student to a legal right to receive a grant if all eligibility requirements are fulfilled (Felder and Ring, 1980, p. 243). The Basic Grant is the newest and the largest of the federal student assistance programs. The duration of four years has been changed to the time required to complete a baccalaureate degree (Office of Student Financial Assistance, 1980).

Baber and Caple (1970) conducted an exploratory study at the University of Missouri-Columbia to discover what factors distinguished the EOG recipients who persisted from those that did not. They found that while the persistence rate for the recipients was seventy-five percent, the persistence rate for the entire freshman class was sixty-five percent.

Approximately four years after the enactment of the EOG program under the Higher Education Act of 1965, the U.S. Office of Education awarded the Bureau of Applied Social Research, Columbia University, a contract to study the students and institutions participating in the EOG

program. Friedman (1971) found that the retention rates for freshmen EOG recipients and for all undergraduates were highest in private institutions and lowest in public two-year institutions. Furthermore, he indicated that the retention rates of EOG recipients usually remained the same whether admissions criteria were waived for small or large percentages of students, unless in an institution with an open admission policy. When institutions provide limited supportive services, the retention rates of EOG recipients were generally lower than that for all undergraduates; but when services were provided at a larger proportion there were no differences in the retention rates of EOG recipients and all undergraduate students. He also contended that while retention rates vary from one institutional type to the other, there was little difference in the persistence rates of EOG freshmen and other freshmen. He concluded, however, that though EOG recipients enter the university with academic and financial handicaps, by the end of the first year they have the same persistence rate as other students (p. 140-145).

In a study of community college BEOG recipients, Cameron (1978) reported that BEOG recipients had a 62.3 percent mean rate of progress while non-recipients had a 71.4 percent mean rate of completion (p. 16).

Blanchfield (1971) found that successful students had

higher percentages of grants than unsuccessful students. He indicated that the explanation might be that "the awarding of a grant provides a degree of security to a student, thus providing more incentive to remain in college" (p. 3). Krieger (1980) found that attrition rates of students receiving grants were on the average generally lower than for students receiving other kinds of financial aid (p. 113).

Astin (1973) indicated that concentrating in grants might enhance students' chances of completing college (p. 305). Astin (1975) showed that grants were very significant in the persistence of female students from low-income families and men from middle income families (p. 70). He also asserted that a combination of the three programs (loans, college work-study, and grants) may have an impact on student persistence.

Combination of Financial Aid Packages

The Carnegie Council (1979), in examining student financial aid for the eighties, contended that the "student aid officer has the task of building a 'package' of resources of various kinds that will enable the individual student to meet his or her total costs" (p. 89). In a study to determine student financial aid packaging and academic progress at Montgomery College, Davis (1978) recommended :

> Students who are financially disadvantaged and who are minority should be given consideration for maximum grant and work assistances. Maximum loan funds should be advanced to this population during the first year of college. (p. 2085-A)

Kreiger (1980) recommended that the U.S. Department of Health, Education and Welfare would be advised to examine the profits of the College Work Study Program in relation to the Basic Educational Opportunity Program. He also recommended the need for more research on the relationship between these programs in higher education (p.119).

In a study of financial aid and student persistence, Astin (1975) examined the combinations of grants and loans, grants and work-study, loans and work-study, and grants, loans, and work-study. Of all the combinations he postulated that a major loan support and college work study program was the only one that was significantly related to student persistence. He concluded, however, that further research is needed to understand the impact of different financial aid packages on each other (p. 22).

Summary

In an effort to achieve the goal of equal educational opportunity for all American students, the federal government has enacted several federal financial assistance programs to enable students to have access to higher education, institutional choice, and persistence after enrollment. These financial aid programs include: loans, college work-study, and grants.

In reviewing financial assistance and amount of aid awarded, research findings are found to be conflicting. However, there seems to be general consensus among researchers that recipients of loan programs exhibit higher attrition rates than recipients of CWS and grants. Loan programs increase the chances of dropping out for male students who use it as a minor or major source of paying college cost. While it increases the persistence rate of females students using it as a minor source, and for Black students in predominantly white institutions, it increases attrition rate very slightly for women using it as a major source.

The college work study program increases the persistence rate for women especially when combined with other financial aid packages.

When necessary supportive services are provided, recipients of grants have the same persistence rate as other students.

In combining these financial aid packages, researchers found that major source of loan support and CWS, Basic Grant and CWS correlate positively with student persistence.

Summary of the Review of Related Literature

A review of the related literature does not show a pattern of relationships between the academic, demographic and financial aid factors and student persistence. However,

there is general consensus among researchers that:

1. Women complete a baccalaureate degree faster than men and drop out more voluntarily than men. Men, on the other hand, drop out more for poor scholarship.

2. Jewish students have a higher persistence rate than non-Jewish students.

3. Black women have a higher persistence rate than their white women contemporaries.

4. Chicano and Spanish speaking students have the lowest completion rate irrespective of variables controlled.

5. Students from lower socioeconomic background have a lower rate of persistence than students from a higher socioeconomic background.

6. High school grades were found to be an excellent predictor of college performance.

7. Students with a B average on college grades seem to have the highest persistence rate, especially Black students.

8. Recipients of loan programs exhibit higher attrition rates than recipients of College Work-Study program and grants.

9. In combining one or more financial aids in a package, two combinations (a major loan support plus College Work-Study and Basic Grant plus Work-Study) correlate positively with student retention.

The conceptual framework and methodology for the study will be presented in Chapters III and IV. Chapter III will also include assumptions, delimitations, limitations, definition of terms, and hypotheses for the study.

CHAPTER III

CONCEPTUAL FRAMEWORK

This study is based on the administrative and organizational theory of Getzels and Guba's Social System which involves two classes of phenomena that are both independent and interactive. The first class is called the nomothetic or normative dimension which consists of the institution with certain roles and expectations that will fulfill the goals of the social system. The second class is called the idiographic or personal dimension which consists of the individual living in the social system with a certain personality and need-dispositions. The outcome of the interactions between the nomothetic and the idiographic dimensions is called social behavior (Campbell, Bridges, and Nystrand, 1977).

In this study, the university is the social system. The nomothetic dimension comprises various departments (institutions) within the university system with certain roles and expectations in fulfilling the mission of the university. The idiographic dimension consists of the students (individuals) in the university system with certain personalities and need-dispositions. The interaction

between the various departments (president, administrators, and faculty members) and the students result in either enhancing the student's ability to persist positively or withdraw (social behavior) from the university system.

In the nomothetic dimension, the institutions are agencies responsible for establishing certain functions. Roles are behaviors expected of the role incumbents. Roles have certain obligations and responsibilities termed "role expectations," and when the role incumbent acts in accordance with these expectations, he is said to be performing his role in the social system. Expectations are those things expected of the role incumbent at various circumstances (Campbell, Bridges, and Nystrand, 1977, p. 185).

In the idiographic dimension, roles are occupied by different individuals, but each individual stamps the particular role he occupies with a distinct style of his own characteristics. Personality was defined by Getzels "as the dynamic organization within the individual of those need dispositions that govern his unique reactions to the environment." Parsons and Shils defined need dispositions as "individual tendencies to orient and act with respect to objects in certain manners and to expect certain consequences from these actions" (Campbell, Bridges and Nystrand, 1977, p. 186). Figures 1 and 2 show the Getzel and Guba model, and the modification for attrition and retention.

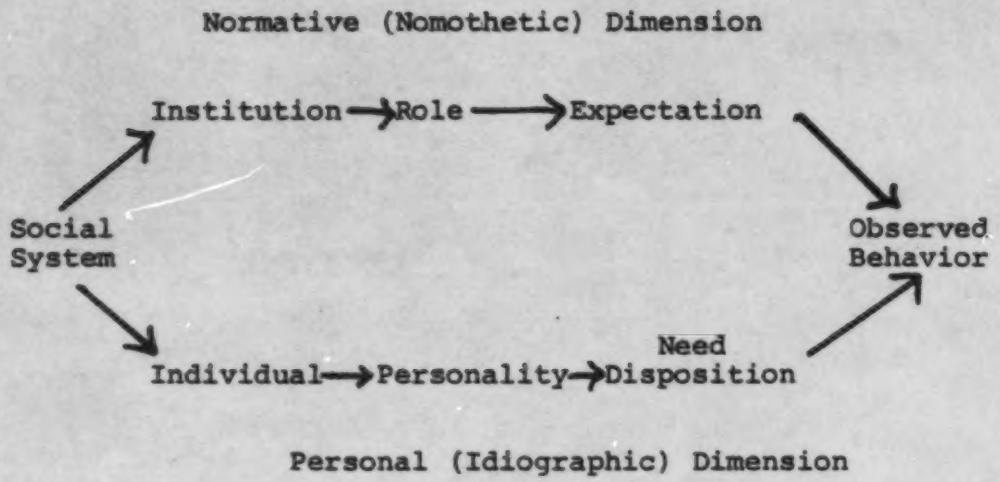


Figure 1: Getzels and Guba's Social System.

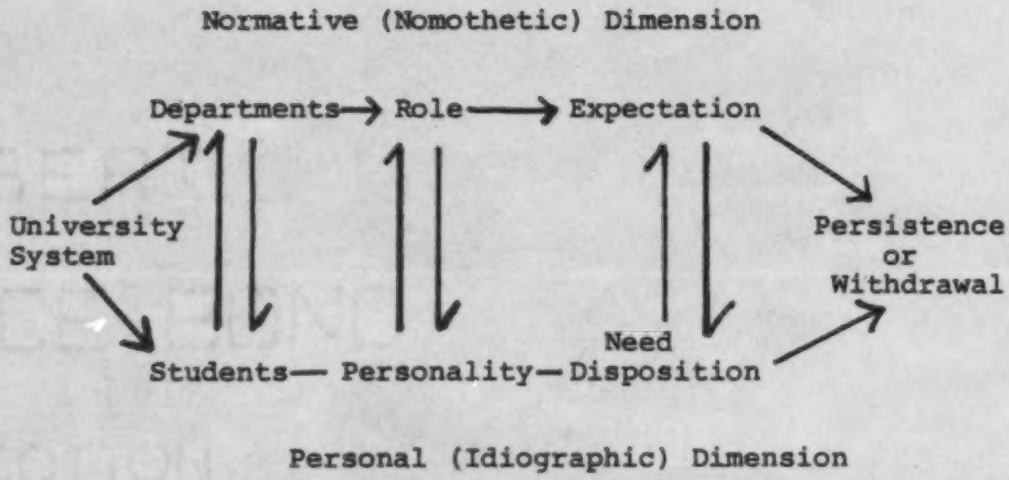


Figure 2: Modification of Getzels and Guba's Model to Explain Attrition and Retention.

In this study, the nomothetic dimention consists of the various departmentw within the university system pledged with certain responsibilities in fulfilling the mission of the university system. These departments in fulfilling their functions and ultimately the mission of the university system have certain roles and expectations of students.

The idiographic dimension presents the students as different individuals with varying backgrounds, academic abilities, personalities, need dispositions, among others.

As mentioned earlier, the two dimensions are both interactive and independent. However, once there is a lack of congruence in the perceived expectations of the university system by the students, and the perceived students' need dispositions by the departments in the university system, the observed behavior is withdrawal from the university system by the student. When there is mutual understanding of students' need dispositions by the university system and consequent provision of necessary supportive services and the students' understanding of the system's expectations, students' ability to persist positively is enhanced.

Assumptions

The assumptions underlying this study are:

1. The financial aid recipients in the freshman class of 1974 at Florida State University are representative

of other students seeking financial assistance at Florida State University.

2. The data to be analyzed for the purpose of this study are accurate.

Delimitation

The study is delimited to federal financial aid recipients in the class of 1974 at The Florida State University (FSU).

Limitations

1. Dichotomous dependent variables reduce the power of a test, which is the probability of rejecting the null hypothesis, when in fact the null is false.

2. Because of the lack of computerized students' record keeping at The Florida State University in 1974-75 academic year, comprehensive data were not available for several variables. After the application of pairwise deletion technique for missing data, the sample in the first academic year is smaller than in the second year.

Hypotheses

Ten hypotheses were tested in this study. All hypotheses were stated in the null form and tested for significance at the $p < .05$ level.

1. There is no statistically significant difference

in retention for financial aid recipients with varying ACT scores.

2. There is no statistically significant difference in retention for financial aid recipients with varying SAT scores.

3. These is no statistically significant difference in retention for financial aid recipients with varying high school GPA.

4. There is no statistically significant difference in retention for financial aid recipients with varying undergraduate GPA.

5. There is no statistically significant difference in retention for financial aid recipients with different ages.

6. There is no statistically significant difference in retention for financial aid recipients according to sex.

7. There is no statistically significant difference in retention for financial aid recipients with different ethnicities.

8. There is no statistically significant difference in retention for financial aid recipients with different socio-economic backgrounds.

9. There is no statistically significant difference in retention for financial aid recipients receiving different financial aid packages.

10. There is no statistically significant difference in retention for financial aid recipients receiving varying amounts of aid.

Definition of Terms

1. American College Test (ACT) is an examination used to determine academic achievement and to predict academic performance in college.

2. Basic Educational Opportunity Program (BEOG), now known as Basic (Pell) Grant, was authorized under the Higher Education Act of 1965 to help students pay for education after high school.

3. College Work-Study Program (CWS) was enacted in the Educational Opportunity Act of 1964 to provide part-time employment to students who need earnings from such employment to meet college cost.

4. Educational Opportunity Grant Program (EOG), now known as the Supplemental Educational Opportunity Grant Program (SEOG), was enacted under the Higher Education Act of 1965 to provide aid for economically disadvantaged students. The program is not an entitlement.

5. Financial Aid Package is the award of one or more types of financial aid to help students meet the cost of higher education.

6. Guaranteed Student Loan Program (GSL) provides loans to students through private lenders such as banks and

credit unions, among others. The loans are insured by the Federal Government or a State Guarantee Agency.

7. National Direct Student Loan Program (NDSL) is a federally funded loan program enacted under the National Defense Education Act of 1958. The program provides low interest loans to institutions to help needy students pay educational cost.

8. Non-graduate is a student who did not complete the necessary requirements for graduation in 1978.

9. Graduate is a student who completed the necessary requirements for graduation in 1978 or before.

10. Scholastic Aptitude Test (SAT) is an examination used to determine academic achievement and to predict academic performance in college.

CHAPTER IV

METHODOLOGY

The methodology of this study is discussed under four major headings: population, variables, data collection, and statistical analysis.

Population

The population for this study was six hundred and fifteen students classified as freshmen in the fall quarter of 1974-75 who received one or more types of federal financial aid package and were enrolled one or more quarters during an academic year. The six hundred and fifteen recipients also constitute a sample of federal financial aid recipients in other classes at the Florida State University.

Variables

Sixteen independent variables were investigated to determine their effect on the dichotomous dependent variable: graduation or non-graduation. The independent variables fall under three general headings: academic, demographic, and financial aid as follows:

Student Academic Factors

1. American College Tests (ACT)
2. Scholastic Aptitude Test (SAT)
3. High School Grade Point Average (HSGPA)
4. Undergraduate Grade Point Average (UGPA)

Student Demographic Factors

1. Age
2. Sex
3. Socio-economic Background (Family Income)
4. Ethnicity (Race)

Student Financial Aid Factors

1. Grant
2. College Work Study Program
3. Loan
4. Loan plus Grant
5. Loan plus College Work Study Program
6. Grant plus College Work Study Program
7. Grant plus Loan plus College Work Study Program
8. Amount of Aid Awarded.

Data Collection

The data used for this investigation were obtained from student permanent records maintained by the Financial Aid Office, Registrar's Office, and the Budget and Analysis Office at The Florida State University.

The records were scrutinized for federal financial aid recipients in the 1974-75 freshman class for a four to five academic year period.

Statistical Analysis

Essentially, this longitudinal study constitutes a case study at The Florida State University. Data were analyzed at The Florida State University Computer Center utilizing the Statistical Package for the Social Sciences (SPSS) through the use of a Central Data Corporation Cyber 74 computer system, to show as clearly as possible the effects of each (and combinations) of the sixteen independent variables on the dependent variable.

Descriptive statistics were used to report the means and standard deviations of continuous data and frequency distribution for categorical/discrete data (See Appendix A). Pearson correlation coefficients are used to measure the strength of relationship between two internal variables (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975, p. 280). In this case, Pearson correlation coefficients were used to ascertain the relationship between continuous variables. The estimation of correlation coefficient (r) between continuous variables were reported (See Appendix A). The more positive r is, the more positive the association between the two variables; the more negative r is, the more negative the association

is between the variables; and if r is near zero correlation, there is little, if any, linear relationship (Kleinbaum and Kupper, 1978; Brewer, 1978).

General multiple regression and stepwise multiple regression were used to determine the linear function of the dependent variable on more than one independent variable. The R^2 (coefficient of multiple determination) for multiple regression equation indicates the proportion of variance in the dependent variables explained by all the independent variables. With the use of the stepwise regression, the independent variables were entered into the equation one by one based on statistical criteria. The variable that explains the greatest amount of variance in the dependent variable or has the highest F value was put in the model first..

CHAPTER V

PRESENTATION AND ANALYSIS OF DATA

The purpose of this chapter is to present the results of statistical analyses for each of the ten hypotheses. Descriptive statistics and general multiple regression techniques were used to find out the effects of the independent variables on the dependent variable. The dichotomous dependent variable was graduation or non-graduation.

There were sixteen independent variables that were investigated to determine their effect on the dependent variable. These independent variables fell under three major headings: academic, demographic and financial aid:

Academic Variables

1. American College Tests (ACT)
2. Scholastic Aptitude Test (SAT)
3. High School Grade Point Average (HSGPA)
4. Undergraduate Grade Point Average (UGPA)

Demographic Variables

1. Age
2. Sex

3. Socioeconomic Background (Family Income)
4. Ethnicity (Race)

Financial Aid Variables

1. Grant
2. College Work Study Program
3. Loan
4. Loan plus Grant
5. Loan plus College Work Study Program
6. Grant plus College Work Study Program
7. Grant plus Loan plus College Work Study Program
8. Amount of Aid Awarded

Given the nature of the study and change in data from one academic year to the other, it was necessary to analyze available data on a yearly basis. In this light, each of the hypotheses was tested on a four academic year period to pinpoint the crucial trends of the independent variables over a longitudinal period.

Test of Hypotheses for Academic Variables

Hypothesis 1:

There is no statistically significant difference in retention for financial aid recipients with varing ACT scores.

The hypothesis ($H_o(1)$: ΔR^2 (ACT)=0) was not entered into the regression model because only thirty-five (5.7

percent) of the sample reported test results to be used as admission criteria (See Appendix A).

Hypothesis 2:

There is no statistically significant difference in retention for financial aid recipients with varying SAT scores.

The hypothesis, ($H_o(2)$: ΔR^2 (SAT) = 0) was not entered into the regression equation because only 30.4 percent of aid recipients reported test results (See Appendix A).

Hypothesis 3:

There is no statistically significant difference in retention for financial aid recipients with varying high school GPAs.

The hypothesis $H_o(3)$: ΔR^2 (HSGPA) = 0) was tested for a four academic year period through the use of a stepwise multiple regression. In the 1974-75 academic year, high school GPA was entered into the regression equation at step number four. The R^2 attributed to the independent variable, high school GPA, was .01017, yielding a calculated F (Fcal) of 1.201. The critical F ratio (F) at 4 and 122 degrees of freedom (DF) was 2.44. The rule is that if F cal ($\geq$) is greater or equal to the critical F, then reject the null hypothesis. Since F cal of 1.201 is less than the critical F of 2.44, hypothesis 3

was not rejected for 1974-75 academic year. The high school GPA only explains 1.02 percent of variance in persistence to the second year.

In the 1975-76 academic year, high school GPA was entered into the regression equation at the fourth step. The R^2 for high school was .01235 with an F cal of 4.787 and critical F (4,256) at p <.05 was 2.42. Since F cal of 4.787 is greater than F of 2.42, hypothesis 3 was rejected. The high school GPA accounted for 1.24 percent of variance in persistence to graduation.

High school GPA was entered into the regression equation at the third step in the 1976-77 academic year. The R^2 attributed to high school GPA was .01779 with an F cal of 16.748 and F (3,206) at p <.05 was 2.65. Since F cal of 16.748 is greater than F of 2.65, hypothesis 3 was rejected. The high school GPA explained 1.78 percent of the variance in persistence.

The independent variable, high school GPA, was entered into the regression equation at the third step in the fourth academic year. The R^2 was .01679 with an F cal of 13.932 and F (3,191) at p <.05 was 2.65. Hypothesis 3 was rejected since F cal of 13.932 is greater than critical F of 2.65. The variance explained in persistence was 1.68 percent.

In comparing the results of hypothesis 3 for each academic year, high school GPA was statistically significant at the $p < .05$ level in the second, third and fourth academic years (see Table 1).

TABLE 1. Test of H_o3 for a Four Academic Year Period.

		R^2	F cal	F	P*
HSGPA	1974-75	.01017	1.201	2.44	.28
HSGPA	1975-76	.01235	4.787	2.42	.03*
HSGPA	1976-77	.01779	16.748	2.65	.001*
HSGPA	1977-78	.01679	13.932	2.65	.001*

* p Statistically Significant ($p < .05$).

Hypothesis 4:

There is no statistically significant difference in retention for financial aid recipients with varying undergraduate GPAs.

The hypothesis ($H_o(4)$: ΔR^2 (UGPA) = 0 was tested for a four year academic period through the use of a stepwise multiple regression equation. The GPA for the freshman year was entered into the regression model at the first step because it had the highest F ratio of 16.836 when compared to the other independent variables in the equation. The R^2 attributed to the GPA in 1974-75

academic year was .11870 with the F cal of 16.836 and critical F (1,125) at p < .05 was 3.92. Since F cal is greater than the critical F, hypothesis 4 was rejected. This indicates that GPA in the first year did increase the probability of a student persisting to the second year by explaining 11.87 percent of the variance in persistence.

The undergraduate GPA for 1975-76 was also entered into the regression equation first. The R^2 attributed to UGPA in the second academic year was .08602 with an F cal of 24.375 and critical F (1,259) at p < .05 was 3.87. Since the F cal is greater than the critical F, hypothesis 4 was rejected for 1975-76 academic year. The UGPA explained 8.60 percent of the variance in persistence.

In the third year, the UGPA was entered second into the regression equation. The R^2 of UGPA 1976-77 was .12413 with an F cal of 34.201 and critical F (2,207) at p < .05 was 3.04. Since F cal of 34.201 is greater than F of 3.04, hypothesis 4 was rejected. The independent variable, UGPA 1976-77, accounts for 12.41 percent of variance in persistence.

In the fourth year, the UGPA was entered second into the regression model. The R^2 of UGPA 1977-78 was .12537 with an F cal of 30.637 and F (2,192) at p < .05 was 3.04. Since F cal of 30.637 was greater than critical F of 3.04,

hypothesis 4 was rejected for the fourth year. The proportion of variance explained in persistence to graduation by the independent variable, UGPA 1977-78, was 12.54 percent.

From the results of testing the hypothesis for a four year academic period, the undergraduate GPA showed a consistent statistical relationship to whether a student persisted to graduation or not. Throughout the four academic years, UGPA showed a relatively high percentage of variance in each regression model (See Table 2).

TABLE 2. Test for H_o4 for a Four Year Academic Period

	R^2	F cal	F	p*
UGPA 1974-75	.11870	16.836	3.92	.001*
UGPA 1975-76	.08602	24.375	3.87	.001*
UGPA 1976-77	.12413	34.201	3.04	.001*
UGPA 1977-78	.12537	30.637	3.04	.001*

*p Statistically Significant ($p < .05$)

Summary of the Test of H_o1 through H_o4.

Hypotheses one and two were not tested because of insufficient data. High school GPA was statistically related to retention in the second, third, and fourth academic years. The undergraduate GPA was statistically significant to persistence throughout the four academic

years. The lowest proportion of variance explained by UGPA in persistence to graduation was 8.60 percent. In conclusion, the UGPA is a stronger predictor variable of persistence than HSGPA.

Test of Hypotheses for Demographic Variables

Hypothesis 5:

There is no statistically significant difference in retention for financial aid recipients with different ages.

Age was divided into three categories: sixteen to twenty-two, twenty-three to twenty-eight, and twenty-nine and above. Recipients in category one graduated more than recipients in categories two and three. Forty-three percent of recipients in category one graduated, while 26.32 percent of recipients in category two graduated and 28.57 percent of those in category three graduated.

The age variable was tested for a four year period through the use of a general multiple regression technique. In the first year, the R^2 attributed to age was .01502 with an F cal of 1.905 and an F table (1,125) of 3.92. Since F ratio of 1.905 is less than the critical F of 3.92, hypotheses 5 was not rejected. Age explains only 1.5 percent of the variance in persistence to retention. For the first year, age was not statistically related to persistence.

In the second year, the R^2 for age was .01502 with an F ratio of 3.948 and F (1,259) at $p < .05$ of 3.87.

Since F ratio of 3.948 is greater than F of 3.87, hypothesis 5 was rejected for the second academic year. This indicates that age was statistically related to whether a student persisted to the third year.

In the 1976-77 academic year, the R^2 of age was .01502 with an F cal of 1.048 and F (1,208) of 3.89. Since F cal of 1.048 is less than F of 3.89, hypothesis 5 was not rejected. This indicates that age was not statistically related to persistence to the third year.

In the fourth year, the R^2 of age was 0.1502 with an F cal of 2.943 and F (1,193) of 3.89. Since the F cal is less than the critical F, the null hypothesis was not rejected.

In testing hypothesis 5 for four years, age was not statistically significant to persistence in the first, third and fourth years (See Table 3).

TABLE 3. Test of H_o5 for a Four Academic Year Period

	R^2	F cal	F	p*
1974-75	.01502	1.906	3.92	.17
1975-76	.01502	3.948	3.87	.05*
1976-77	.01502	1.048	3.89	.07
1977-78	.01502	2.943	3.89	.08

*p Statistically Significant ($p < .05$)

Hypothesis 6:

There is no statistically significant difference in retention for financial aid recipients according to sex.

The hypothesis (H_o (6): ΔR^2 (SEX) = 0) was tested for four years through the use of stepwise multiple regression. There were 37.6 percent males (two hundred and thirty-one) and 62.4 percent females (three hundred and eighty-four).

The sex variable was entered at the last step (five) into the regression equation because it had the lowest F ratio of .269 when compared to other independent variables. The calculated R^2 attributed to sex in the first academic year was .00087, yielding an F cal of .269 and critical F (5,121) at $p < .05$ of 2.29. Since F cal of .269 is less than F of 2.29, hypothesis 6 failed to be rejected. This means that sex was not statistically related to persistence to the second year.

In the 1975-76 academic year, sex was also entered into the regression model at step five because of the lowest F ratio of .627. The R^2 of sex was .00076 with an F cal of .627 and F table (5,255) at $p < .05$ of 2.24. Hypothesis 6 was not rejected for the second year because F cal of .627 was less than F of 2.24. This indicates that sex did not help the probability of a student persisting to the third year.

The sex variable was not included in the stepwise regression equation in the third year because of a partial F of .001. The Statistical Package for the Social Sciences manual set the default value of F at .01 (Nie, et al., 1975, p. 346). This means that a partial F of an independent variable that is less than .01 will not be included in the regression equation. Therefore, sex with a partial F of .001 was left out of the equation. However, a general multiple regression was run to determine in what way sex influenced persistence to the third year. The R^2 of sex was .00501 with an F cal of 1.048 and critical F of (1,208) at p <.05 of 3.89. With the F cal of 1.048 less than critical F of 3.89, hypothesis 6 failed to be rejected. This shows that sex was not statistically related to persistence.

In the 1977-78 academic year, sex was entered at the fifth level because of the lowest F ratio of .941 when compared to other independent variables in the regression euqation. The R^2 attributable to sex was .00018 with an F cal of .941 and critical F (5,189) at p <.05 of 2.26. Since F cal of .941 is less than critical F of 2.26, hypothesis 6 was not rejected.

In comparing the test results for the four years, sex was not statistically related to retention (See Table 4). Of the two hundred and thirty-seven recipients that

persisted to graduation, one hundred and sixty were females and seventy-seven were males. The graduation rates, therefore, were 42 percent for females and 33.3 percent for males.

TABLE 4. Test of H_o6 for a Four Year Academic Period

Sex	R^2	F cal	F	p*
1974-75	.00087	.269	2.29	.605
1975-76	.00076	.627	2.24	.429
1976-77	.00501	1.048	3.89	.307
1977-78	.00018	.941	2.26	.333

p* Statistically Significant ($p < .05$).

Hypothesis 7:

There is no statistically significant difference in retention for financial aid recipients with different ethnicity.

The hypothesis ($H_o(7)$: ΔR^2 (Ethnicity) = 0) was tested through the use of a general multiple regression. Five races were considered, of which East Indians had the highest number of students (See Table 5).

In the first year, the R^2 of race was .01247 with an F cal of .385 and F table (4,122) at $p < .05$ of 2.44. Hypothesis 7 was not rejected since F cal of .385 is less than F table of 2.44. The variance explained by ethnicity

TABLE 5. Distribution of Aid Recipients by Ethnicity

Ethnicity	N	percent
Black	143	23.3
White	206	33.5
East Indian	254	41.3
Spanish American	9	1.5
Oriental American	3	.5
TOTAL	615	100.0

in persistence to graduation was 1.25 percent. This indicates that ethnicity had little effect on persistence.

In the 1975-76 academic year, hypothesis 7 failed to be rejected since F cal of .808 was less than critical F (4,256) of 2.40. The R^2 was .01247 which explained 1.25 percent of variance in the dependent variable.

In the third year, ethnicity did not reach significance at $p < .05$, since the null hypothesis failed to be rejected because the F cal of .647 was less than critical F (4,205) of 2.42.

In the fourth year, the R^2 attributed to ethnicity was .01247 with an F cal of .599 and critical F (4,190) at $p < .05$ of 2.42. Since F cal of .599 was less than critical F of 2.42, hypothesis 7 was not rejected.

To summarize the results for a four year period, ethnicity had little effect on persistence to graduation (See Table 6).

TABLE 6. Test of $H_o{}^7$ for a Four Academic Year Period

Ethnicity	R^2	F cal	F	p*
1974-75	.01247	.385	2.44	.81
1975-76	.01247	.808	2.40	.52
1976-77	.01247	.647	2.42	.63
1977-78	.01247	.599	2.42	.66

*p Statistically Significant ($p < .05$)

Hypothesis 8:

There is no statistically significant difference in retention for financial aid recipients with different socio-economic backgrounds (Family income).

Family income was categorized into four sections: Less than $9,000, $10,000 to $19,999, $20,000 to $29,999, and more than $30,000. Forty-one percent of recipients from families with income less than $9,999 graduated; 48.3 percent of those from families with income between $10,000 to $19,999 graduated; sixty percent of those from families with an income of $20,000 to $29,000 graduated; and one hundred percent of those from families that make more than $30,000 graduated. This indicates that an increase in family income enhances students' persistence to graduation.

The hypothesis (H_o8: ΔR^2 (FAMINCM) = 0) was tested through the use of a stepwise regression equation. The independent variable, family income, was entered into the regression model at the third step in the first academic year. The R^2 of family income was .01558 with an F cal of .962 and critical F (3,123) at $p < .05$ of 2.68. Since F cal of .962 was not greater than critical F of 2.68, hypothesis 8 was not rejected. The variance accounted for by family income was 1.56 percent in student persistence to graduation. Significance was not attained at the .05 level.

In the second year, family income was included into the regression equation at the third step. The R^2 of family income was .02190 with an F cal of .676 and critical F (3,257) at $p < .05$ of 2.63. Therefore, hypothesis 8 failed to be rejected since the F cal is less than the critical F. The variance explained was 2.2 percent. Family income apparently did not help the probability of persistence to the third year.

In 1976-77, family income was tested in the regression model at the fourth step. The R^2 of family income was .01077 with an F cal of 4.967 and F table (4,205) of 2.42. Since F cal is greater than F table, hypothesis 8 was rejected for the third academic year. This shows that family income was statistically related to

persistence to the fourth year.

In the fourth year, the independent variable was tested at the fourth level. The R^2 attributed to family income was .00870 with an F ratio of 5.271 and F table (4,190) at $p < .05$ of 2.42. Hypothesis 8 was rejected for the fourth year because F ratio of 5.271 is greater than F table of 2.42. This indicates that family income did help the probability of a student persisting to graduation.

In comparing the results, family income was not statistically related to student persistence in the first two academic years, while it did increase the probability of a student persisting to graduation in the third and fourth years (See Table 7).

TABLE 7. Test of H_o8 for a Four Year Academic Period

Family Income	R^2	F cal	F	p*
1974-75	.01558	.962	2.68	.33
1975-76	.02190	.676	2.63	.41
1976-77	.01077	4.967	2.42	.02*
1977-78	.00870	5.271	2.42	.02*

*p Statistically Significant ($p < .05$)

Summary of the Test of H_o5 through H_o8

In testing hypothesis five, age was not statistically related to student persistence to retention. In dividing age into three categories: sixteen to twenty-two, twenty-three to twenty-eight, and twenty-nine and above,

the percent of those that graduated in category one was about twice the percentage of graduates in categories two and three.

In comparing the results for hypothesis six, sex did not attain significance at the .05 level throughout the four years. Of the two hundred and thirty-seven recipients who persisted to graduation, one hundred and sixty were females and seventy-seven were males, producing a rate of 42 percent for females and 33 percent for males.

For hypothesis seven, ethnicity did not increase the probability of a student persisting to graduation. In testing hypothesis eight, family income was not statistically related to persistence in the first and second academic years, while it increased the probability of a student persisting to graduation in the third and fourth years. Students from higher family incomes persisted to graduation at a higher rate than students from lower family incomes.

Financial Aid Variables

Before testing the hypothesis for financial aid variables, an overview of different financial aid packages and amount of awards will help the reader to understand further the interpretations of the hypothesis .

Table 8 presents recipients by type of financial aid package for a four academic year period. The financial aid package was divided into two types: single and combined packages. The single package consists of only one type of financial assistance while the combined consists of more than one type of financial assistance.

Over the four academic year period, the grant package, and loan plus grant were the most popular financial aid packages (Grant, N = 574; Loan + Grant, N = 351), while college work-study and Loan plus college work-study (CWSP, N = 21; Loan + CWSP, N = 44) were the least popular. In rank order of importance by number of awards, grant (N=574) was the most popular financial aid package, followed by Loan plus grant (N=351); Loan (249); and Loan plus grant plus CWSP (N=178). The number of recipients decreased very drastically from one academic year to the other because by the second academic year, some students have either been dismissed for poor scholarship, have withdrawn from the university, or exhausted their federal financial assistance eligibility, and by the third year some graduated from the university.

Of the sample of six hundred and fifteen, five hundred and sixty-three students actually received money, while the remaining fifty-two students did not, for reasons unknown (See Appendix A).

TABLE 8. Type of Financial Aid Package Awarded in a Four Acadmic Year Period

	1974-75		1975-76		1976-77		1977-78	
Type of Aid	N	Percent	N	Percent	N	Percent	N	Percent
Loan	168	27.3	50	8.2	16	2.6	15	2.4
CWSP	4	.7	8	1.3	3	.5	6	1.0
Grant	218	35.4	150	24.4	120	19.5	86	14.0
Loan/Grant	190	30.9	34	5.5	66	10.7	61	9.9
Loan/CWSP	21	3.4	11	1.8	2	.3	10	1.6
Grant/CWSP	4	.7	17	2.8	18	2.9	7	1.1
Loan/Grant/CWSP	10	1.6	76	12.4	56	9.1	36	5.9
TOTAL	615	100.0	346	56.3	281	45.69	221	35.93

Test of Hypotheses for Financial Aid Variables

Hypothesis 9:

There is no statistically significant difference in retention for financial aid recipients receiving different aid packages.

The null hypothesis (H_o9): ΔR^2 (Financial Aid) =0) was tested for four different academic years through the use of multiple regression. In the first year, the R^2 attributed to the independent variable, type of financial aid package, was .02413 with an F cal of .495 and critical F (6,120) at $p < .05$ of 2.17. Since F cal of .495 is less than critical F of 2.17, hypothesis 9 failed to be rejected. Statistical significance was not reached at the .05 level in the first academic year. This meant that the type of financial aid package received did not help student persistence to the second academic year. The variance explained by the type of package was 2.4 percent.

In 1975-76 academic year, statistical significance was attained at $p < .05$ with R^2 of .07396 (F cal = 3.381 and F (6,254) = 2.13). The null hypothesis was rejected in the second year. The variance explained was 7.4 percent, and the grant package explained the highest variance of 5.64 percent out of an overall variance of 7.4 percent. In explaining persistence to graduation in the second year, the grant package was the most important.

In the third year, the R^2 attributed to type of financial aid package was .15797 with an F ratio of 6.348 and F table (6,203) at $p < .05$ of 2.14. Since F ratio of 6.348 was greater than F table of 2.14, hypothesis 9 was rejected. The overall variance explained by all financial aid packages in persistence to graduation was 15.80 percent. Of the overall variance explained, the grant package accounted for 9.54 percent while 4.13 percent was the variance accounted for by loan plus grant package. In the third year, the grant package was the most important financial aid type that helped students to persist to graduation, followed by the loan plus grant package.

In the 1977-78 academic year, the R^2 attributed to type of financial aid package was .20323, yielding an F ratio of 7.992 and F table (6,188) of 2.14. Statistical significance was reached at the .05 level, with F ratio of 7.992 greater than F table of 2.14, resulting in rejection of hypothesis 9 for the fourth year. Of the overall variance of 20.32 percent, the grant package explained 11.69 percent, while 4.91 percent was accounted for by the loan plus grant package.

In comparing the results of hypothesis 9, the null was rejected for 1975-76, 1976-77, and 1977-78 (See Table 9). In determining what type of financial aid package

best explained student persistence to graduation, the grant package was the most important, followed by the loan plus grant package. In the first academic year, the type of financial aid package did not seem to make any difference in student persistence. In the second, third and fourth years, the grant explained the highest variance in persistence to graduation. The grant plus CWS and loan plus grant packages were the second most important in the second year, while in the third and fourth years the loan plus grant package was the second most important.

Hypothesis 10:

There is no statistically significant difference in retention for financial aid recipients receiving varying amounts of aid.

TABLE 9. Test of H_o9 for a Four Academic Year Period

Type of Aid	R^2	F cal	F	p*
1974-75	.02413	.495	2.17	.811
1975-76	.07396	3.381	2.13	.003*
1976-77	.15797	6.348	2.14	.001*
1977-78	.20323	7.992	2.14	.001*

*p Statistical Significance ($p < .05$)

The hypothesis $H_o(10)$: ΔR^2 (Amount) = 0) was tested through the use of a stepwise multiple regression equation for four academic years. The independent variable was put into the regression model at the second step in the first academic year. The independent variable was put into the regression model at the second step in the first academic year. The R^2 of amount was .01913 with an F cal of 2.752 and critical F (2,124) of 3.07. With F cal of 2.752 less than F of 3.07, hypothesis 10 was not rejected. The variance explained by amount in persistence to graduation was 1.9 percent, suggesting that the amount of award did not enhance the probability of a student persisting to the second year.

In 1975-76 academic year, amount of award was entered into the regression equation at the second step. The R^2 of amount was .12027 with an F cal of 39.097 and critical F (2,258) of 3.03. With an F cal of 39.097 greater than F table of 3.03, hypothesis 10 was rejected. Amount of award reached statistical significance at the .05 level by explaining 12.03 percent of variance in persistence to graduation.

In the third year, amount of award was tested at the first step in the regression equation. The R^2 attributed to amount was .12413 with an F ratio of 29.591 and F table (1,208) at $p < .05$ of 3.89. Hypothesis 10 was

rejected. The variance accounted for by amount of award in persistence to graduation was 12.46 percent.

The amount of award in the fourth year was also entered into the regression equation at the first step. Statistical significance was reached at .05 level with R^2 of .08893 with F ratio of 18.838 and F table (1,193) of 3.89.

In comparing the results of hypothesis 10 for four academic years, statistical significance was attained at the .05 level in the second, third and fourth years. In the first year, the amount of money awarded did not appear to help student persistence to graduation (See Table 10).

TABLE 10. Test of H_o10 for a Four Academic Year Period

Amount of Award	R^2	F cal	F	p*
1974-75	.01913	2.752	3.07	.100
1975-76	.12027	39.097	3.03	.001*
1976-77	.12413	29.591	3.89	.001*
1977-78	.08893	19.838	3.89	.001*

*p Statistically Significant ($p < .05$)

Summary of the Test H_o9 and H_o10

Hypothesis 9 and 10 were tested for a four year academic period. Hypothesis 9 was tested through the use

of a general multiple regression while hypothesis 10 was tested through the use of a stepwise multiple regression.

Hypothesis 9 was not rejected in the 1974-75 academic year, but was for the remaining three years. In determining what financial aid package best helped recipients to persist to graduation, the grant package was the best, followed by the loan plus grant package.

In testing hypothesis 10 for the effect of the amount of award on persistence to graduation, statistical significance was not reached in the 1974-75 year. In the second, third and fourth academic years, amount of award did appear to help recipients to persist to graduation.

Regression Models

Regression models were developed by using the best predictor variables of retention. It had been established in the preceding analyses that undergraduate grade point average, high school grade point average, family income, type of financial aid package and amount of award were statistically related to retention. The interaction of these independent variables on the dependent variable were determined through the development of regression models for four academic year period. The models used a five step multiple regression.

The following presents the variable(s) and explanation at each step of the regression models:

STEP 1	EXPLANATION
Ho: ΔR^2 (GPA74) = 0	Undergraduate grade point average in 1974-75 academic year was statistically related to retention.
STEP 2	
Ho: ΔR^2 (GPA74 X AM74) = 0	Undergraduate grade point average and amount of award in 1974-75 were statistically related to retention.
STEP 3	
Ho: ΔR^2 (GPA74 X AM74 X FAMINCM) = 0	Undergraduate grade point average, amount of award and family income in 1974-75 were statistically related to retention.
STEP 4	
Ho: ΔR^2 (GPA74 X AM74 X FAMINCM X HSGPA) = 0	Undergraduate grade point average, amount of award, family income and high school grade point average in 1974-75 academic year were statistically related to retention.
STEP 5	
Ho: ΔR^2 (GPA74 X AM74 X FAMINCM X HSGPA X AIDS74) = 0	Undergraduate grade point average, amount of award, family income, high school grade point average and type of financial aid package were statistically related to retention.

In the 1974-75 regression model, the overall R^2 accounted for by the independent variables was .16549, yielding a variance of seventeen percent in persistence. Of the seventeen percent accounted for by all the

independent variables, undergraduate grade point average explained twelve percent of variance in persistence, amount of award explained two percent, family income explained two percent, high school grade point average accounted for one percent, while the type of financial aid package only accounted for .2 percent (See Table 11).

Of the independent variables in the model, the undergraduate grade point average was the best predictor of persistence followed by the amount of award and socio-economic background. The type of financial aid package did not make any difference in 1974-75 academic year.

From the results presented above, the best regression model that best predicted persistence to the second academic year was: H_O: ΔR^2 (GPA74) = 0.

TABLE 11. Regression Equation for 1974-75 Academic Year

Variables	Cumulative R^2	ΔR^2	p*
STEP 1, GPA74	.11870	.11870	.001*
STEP 2, AM74	.13783	.01913	.001*
STEP 3, FAMINCM	.15342	.01558	.001*
STEP 4, HSGPA	.16359	.01017	.001*
Step 5, AIDS74	.16549	.00190	.001*

*p Statistically Significant ($p < .05$)

STEP 1	EXPLANATION
Ho: ΔR^2 (GPA75) = 0	Undergraduate grade point average in 1975-76 academic year was statistically related to retention.
STEP 2	
Ho: ΔR^2 (GPA75 X AIDS75) = 0	Undergraduate grade point average and type of financial aid package in 1975-76 were statistically related to retention.
STEP 3	
Ho: ΔR^2 (GPA75 X AIDS75 X AM75) = 0	Undergraduate grade point average, type of financial aid package and amount of award in 1975-76 academic year were statistically related to retention.
STEP 4	
Ho: ΔR^2 (GPA75 X AIDS75 X AM75 X FAMINCM) = 0	Undergraduate grade point average, type of financial aid package, amount of aid awarded, and family income were statistically related to retention.
STEP 5	
Ho: ΔR^2 (GPA75 X AIDS75 X FAMINCM X HSGPA) = 0	Undergraduate grade point average, type of financial aid package, amount of award, family income and high school grade point average were statistically related to retention.

The R^2 attributed to all the independent variables was .24991, yielding a total variance of twenty-five percent accounted for in the dependent variable. Of the total amount of variance explained by all the independent

variables, undergraduate grade point average accounted for eleven percent while the type of financial aid package accounted for nine percent. The socio-economic background accounted for 2.2 percent, amount of award accounted for two percent, while high school grade point average explained 1.11 percent (See Table 12).

The undergraduate grade point average was also the most powerful predictor variable of persistence in the second academic year, followed by the type of financial aid package. For the second academic year, the best predictor regression equation of persistence was:

$$Ho: \Delta R^2 \text{ (GPA75/AIDS75)} = 0$$

TABLE 12. Regression Equation for 1975-76 Academic Year

Variables	Cumulative R^2	ΔR^2	p*
STEP 1, GPA75	.10938	.10938	.001*
STEP 2, AIDS75	.19806	.08868	.001*
STEP 3, AM75	.21639	.01833	.001*
STEP 4, FAMINCM	.23855	.02216	.001*
STEP 5, HSGPA	.24991	.01135	.001*

*p Statistically Significant ($p < .05$)

STEP 1	EXPLANATION
Ho: ΔR^2 (AIDS76) = 0	Type of financial aid package in 1976-77 academic year was statistically related to retention.
STEP 2	
Ho: ΔR^2 (AIDS76 X GPA76) = 0	Type of financial aid package and undergraduate grade point average in 1976-77 academic year were statistically related to retention.
STEP 3	
Ho: ΔR^2 (AIDS76 X GPA76 X FAMINCM) = 0	Type of financial aid package, undergraduate grade point average and family income in 1976-77 were statistically related to retention.
STEP 4	
Ho: ΔR^2 (AIDS76 X GPA76 X FAMINCM X HSGPA) = 0	Type of financial aid package, undergraduate grade point average, family income and high school grade point average in 1976-77 were statistically related to retention.
STEP 5	
Ho: ΔR^2 (AIDS76 X GPA76 X FAMINCM X HSGPA X AM76) = 0	Type of financial aid package, undergraduate grade point average, family income, high school grade point average, and amount of award were statistically related to retention.

The overall R^2 of all the independent variables was .33958, yielding a variance of thirty-four percent in

retention. Of the total variance explained in persistence, the type of financial aid package accounted for 19.3 percent while undergraduate grade point average accounted for twelve percent. Family income explained two percent; high school grade point average, 1.2 percent; and amount of award, .26 percent (See Table 13).

The type of financial aid package was the most powerful predictor variable of retention in the 1976-77 model. The undergraduate grade point average which was the most important predictor variable in 1974-75 and 1975-76 academic years was dropped into the second place in 1976-77 academic year, though with a high explanatory power of twelve percent. The amount of award examined singularly was the poorest indicator variable of retention. For the third academic year, the most powerful predictor regression equation of retention was:

$$Ho: \Delta R^2 \text{ (AIDS76/GPA76)} = 0$$

TABLE 13. Regression Equation for 1976-77 Academic Year

Variables	Cumulative R^2	ΔR^2	p*
STEP 1, AIDS76	.19271	.19271	.001*
STEP 2, GPA76	.30837	.11566	.001*
STEP 3, FAMINCM	.32511	.01674	.001*
STEP 4, HSGPA	.33702	.01191	.001*
STEP 5, AM76	.33958	.00257	.001*

*p Statistically Significant ($p < .05$)

STEP 1	EXPLANATION
Ho: ΔR^2 (AIDS77) = 0	Type of financial aid package in 1977-78 academic year was statistically related to retention.
STEP 2	
Ho: ΔR^2 (AIDS77 X GPA77) = 0	Type of financial aid package and undergraduate grade point average in 1977-78 were statistically related to retention.
STEP 3	
Ho: ΔR^2 (AIDS77 X GPA77 X HSGPA) = 0	Type of financial aid package, undergraduate grade point average and high school grade point average were statistically related to retention.
STEP 4	
Ho: ΔR^2 (AIDS77 X GPA77 X HSGPA X FAMINCM) = 0	Type of financial aid package, undergraduate grade point average, high school grade point average and family income were statistically related to retention.
STEP 5	
Ho: ΔR^2 (AIDS77 X GPA77 X HSGPA X FAMINCM X AM77) = 0	Type of financial aid package, undergraduate grade point average, high school grade point average, family income and amount of award were statistically related to retention.

The R^2 attributed to all the independent variables was .29665, yielding a variance of thirty percent in the dependent variable. Of the total variance explained by

all the independent variables, the type of financial aid package accounted for 16.5 percent, while undergraduate grade point average accounted for ten percent. High school grade point average, family income and amount of award accounted for 3.22 percent (See Table 14). The type of financial aid package and undergraduate grade point average were the most powerful predictor variables in the equation for 1977-78. The best predictor regression equation for 1977-78 was:

$$Ho: \Delta R^2 \text{ (AIDS77/GPA77)} = 0$$

TABLE 14. Regression Equation for 1977-78 Academic Year

Variables	Cumulative R^2	ΔR^2	p*
STEP 1, AIDS77	.16460	.16460	.001*
STEP 2, GPA77	.26603	.10143	.001*
STEP 3, HSGPA	.28422	.01819	.001*
STEP 4, FAMINCM	.29341	.00919	.001*
STEP 5, AM77	.29665	.00324	.001*

*p Statistically Significant ($p < .05$)

Summary

The most powerful predictor variables of retention were used to develop regression equations for four academic years. In the 1974-75 year, undergraduate grade point average was the most important predictor variable

by accounting for twelve percent of variance in retention. Each of the other independent variables in the equation did not explain more than two percent of variance in retention singularly. The best predictor regression equation of retention in 1974-75 was:

$$Ho: \Delta R^2 (GPA74) = 0$$

In the 1975-76 academic year, the undergraduate grade point average was also the best predictor variable of retention by explaining eleven percent of variance, followed by the type of financial aid package which explained nine percent of the variance in retention. The other independent variables did not explain up to two percent of variance individually. The best predictor regression equation of retention in 1975-76 was:

$$Ho: \Delta R^2 (GPA75/AIDS75) = 0$$

In the third year, 1976-77, the type of financial aid package was the most powerful predictor variable of retention, followed by undergraduate grade point average. The type of financial aid package awarded explained 19.3 percent of the variance in retention, while undergraduate grade point average explained twelve percent. The other independent variables did not explain up to two percent of variance in retention individually. The predictor regression equation for 1976-77 year was:

$$Ho: \Delta R^2 (AIDS76/GPA76) = 0$$

In the 1977-78 academic year, the type of financial aid package was also the most powerful predictor variable of retention, followed by the undergraduate grade point average. The type of financial aid package accounted for seventeen percent of variance in retention, while undergraduate grade point average accounted for ten percent. The other independent variables accounted for less than two percent individually. The predictor equation for 1977-78 was:

$$Ho: \Delta R^2 \text{ (AIDS77/GPA77)} = 0$$

Undergraduate grade point average was the most powerful predictor variable in 1974-75 and 1975-76 academic years, dropping to the second place in the 1976-77 and 1977-78 academic years. The type of financial aid package awarded did not make any difference in the first year. In the second year, it was the second most powerful predictor variable and in the third and fourth years it was the most powerful predictor variable of retention.

The undergraduate grade point average was a consistent predictor variable of retention throughout the four years. The type of financial aid package awarded was consistent for the last three years of the four academic years.

Rates of Attrition and Retention for a Five Academic Year Period

Now that the ten hypotheses have been tested through the use of statistical techniques, a major question is: How many of the recipients persisted to graduation?

Table 15 depicts the number and percentage of students that graduated in 1976-77 through 1978-79 academic years. By 1976-77 academic year, forty-seven (7.6 percent) graduated; in the fourth year, 1977-78 year, one hundred and forty (22.8 percent) persisted to graduation; and in 1978-79, 8.1 percent of the recipients graduated. Over a five year academic period, the retention rate was 38.54 percent. At the end of the fifth academic year, sixty-two recipients were still enrolled; fifty-two had been dismissed for poor scholarship; one hundred and twenty had withdrawn from the university; while those who did not withdraw officially (stopouts) numbered up to one hundred and forty-four. The rate of attrition over a five year academic period was 61.46 percent (See Table 16).

The results of the analyses of the hypotheses and the rates of attrition and retention were discussed in this Chapter. Chapter VI presents the summary, conclusions, implications, and recommendations for further study.

TABLE 15. Retention for a Five Academic Year Period

Year of Graduation	N	Percent
1976-77	47	7.6
1977-78	140	22.8
1978-79	50	8.1
TOTAL	237	38.54

TABLE 16. Attrition over a Five Academic Year Period

Non-Graduates	N	Percent
Still enrolled after 1978-79	62	10.0
Dismissed	52	8.5
Withdrew Officially	120	19.5
Withdrew Unofficially	144	23.4
TOTAL	378	61.46

CHAPTER VI

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

In chapters one through five, focus has been placed on the statement of the problem, significance of the problem, review of related literature, conceptual framework, research methodology, and presentation and analysis of data. This chapter presents the major findings of the study from the data, conclusions, and recommendations for further research.

Summary

The purpose of this study was to examine the federal financial aid recipients in 1974-75 freshman class at The Florida State University, to determine if factors of type of federal financial aid package received, amount of money awarded, socio-economic status (family income), ethnicity (race), age, sex, and academic ability were related to retention.

The study was designed to test the following hypotheses:

1. There is no statistically significant difference in retention for financial aid recipients with varying ACT scores.

2. There is no statistically significant difference in retention for financial aid recipients with varying SAT scores.

3. There is no statistically significant difference in retention for financial aid recipients with varying high school GPA.

4. There is no statistically significant difference in retention for financial aid recipients with varying undergraduate GPA.

5. There is no statistically significant difference in retention for financial aid recipients with different ages.

6. There is no statistically significant difference in retention for financial aid recipients according to sex.

7. There is no statistically significant difference in retention for financial aid recipients with different ethnicities.

8. There is no statistically significant difference in retention for financial aid recipients with different socio-economic backgrounds.

9. There is no statistically significant difference in retention for financial aid recipients receiving different financial aid packages.

10. There is no statistically significant differenve in retention for financial aid recipients receiving varying amounts of aid.

Data were collected from students' permanent records at The Florida State University. Data were gathered on academic, demographic and financial aid variables for six hundred and fifteen students classified as federal financial aid recipients in the frsheman class of 1974-75 academic year. General multiple regression and stepwise multiple regression were the basic statistical techniques used in analyzing the collected data. Each hypothesis was tested for a four academic year period (1974-75, 1975-76, 1976-77, and 1977-78). Data were analyzed at The Florida State University Computer Center utilizing the Statistical Package for the Social Sciences (SPSS), through the use of a Control Data Corporation Cyber 74 computer system.

From the analyses of collected data, the following findings are worthy of note:

1. The high school GPA did not reach statistical significance at the .05 level in the first academic year, 1974-75. It explained 1.02 percent of the variance in persistence. Statistical significance was reached at the second, third, and fourth years. In using Pearson's corrlation coefficient, high school GPA was found to be statistically related to undergraduate performance.

2. The undergraduate GPA showed a consistent statistical relationship to whether a student persisted to graduation or not. Throughout the four academic years, the explanatory power of UGPA was relatively high in each regression equation. In 1974-75 the variance explained in persistence to graduation was 11.87 percent; 1975-76, 8.60 percent; 1976-77, 12.41 percent; and 1977-78, 12.54 percent. The explanatory power of UGPA was strongest in the third and fourth years.

3. The age of federal financial aid recipients attained statistical significance at .05 level only in the second year out of the four academic years. Recipients were divided into three categories: sixteen to twenty-two, twenty-three to twenty-eight, and twenty-nine and above. Forty-three percent of recipients in category one persisted to graduation; 26.32 percent of those in category two graduated, and 28.57 percent of those in category three graduated. However, the recipients in category one constitute 87.7 percent of the sample in this study.

4. The explanatory power of sex through a four academic year period was, perhaps, the lowest in this study. The highest variance explained in persistence

to graduation was .5 percent in 1976-77 academic year. Of the two hundred and thirty-seven recipients who persisted to graduation, one hundred and sixty were females and seventy-seven were males, producing 42 percent for females and 33 percent for males.

5. The ethnicity of a student did not help persistence to graduation. Statistical significance at .05 level was not attained for any of the four academic years. The R^2 explained was 1.25 percent for each academic year.

6. Family income was not statistically related to persistence in 1974-75 and 1975-76 academic years, while it increased the probability of a student persisting to graduation in the third and fourth years. In dividing family income into categories, it could be seen that recipients from higher family incomes persisted to graduation at a higher rate than recipients from lower family income brackets.

7. In determining what type of financial aid package best explained student persistence to graduation, the grant package was the most important followed by the loan plus grant package. In the first academic year, 1974-75, the type of financial aid package received did not reach statistical significance at the .05 level. In the second, third and fourth years, the grant package

explained the highest variance in persistence to graduation. The grant plus CWS package and loan plus grant package were the second most important in the second academic year, while in the third and fourth academic years, the loan plus grant package was the second most important. Attrition rates for students receiving the loan plus CWS package and the loan package were generally higher than for recipients of other financial aid packages.

8. The amount of financial aid received by a student did not attain statistical significance in the first year, 1974-75. In the second, third and fourth academic years, the amount of financial aid received did increase the probability of a student persisting to graduation. The variance explained in retention in 1974-75 was 1.9 percent; 1975-76, 12.03 percent; 1976-77, 12.4 percent; and 1977-78, 8.89 percent. The explanatory power of the amount of financial aid received was high for the last three academic years, but highest for the second and third years.

9. The rate of retention over a three academic year period was 7.6 percent; over four academic years, 30.41 percent; and over a five academic year period, 38.54 percent.

Conclusions

The findings of the data analyses seem to support the following conclusions with regard to the effects of academic, demographic, and financial aid variables on persistence to graduation or non-graduation.

High school grade point average was significant in predicting persistence to graduation. Previous studies by Morrisey (1971), Lenning and others (1980), Stoner (1979), Perry (1981), Howell and others (1979), and Bennett (1978) support this conclusion.

The undergraduate GPA was the most important academic variable in that it showed a consistent statistical significant relation to student retention. This conclusion parallels the findings of Astin (1975, 1977), Eaton (1979), Lenning and others (1980), and Bennett (1978).

Recipients between the ages of sixteen and twenty-two persisted to graduation at a higher rate than students who were twenty-three years of age and older. Zanoni (1980) found that twenty-three year old students and older had a higher dropout rate than younger students.

More females persisted to graduation than males. Over a five year academic period, 67.5 percent of females graduated, while 32.5 percent of males graduated. Stoner (1979) and Thompson (1980) found that females tended to graduate more frequently than men.

The ethnicity of a student did not exhibit any statistical significance in persistence to graduation. This finding is consistent with that of Pedrini and Pedrini (1978), Kohen and others (1976, 1978), and Selby (1970, 1973).

Students from higher family income brackets persisted to graduation more frequently than students from lower income families. Similar results were reported by Astin (1964) and Halstead (1974).

The grant package was the most important financial aid type in explaining student persistence to graduation. The finding of this research supports the conclusion that grant should be a major proportion of any financial aid type if retention is a major part of the institutions (financial office) policy. Blanchfield's (1971), and Baker and Capli's (1970) findings support the aforementioned statement. The recipients of loan package and loan plus CWS exhibit a higher attrition rate than recipients of other financial aid packages. This finding is contrary to Astin's (1975) assertion that a major loan support and CWS was significantly related to student persistence, while Krieger (1980) agrees that loan package is negatively related to persistence to graduation.

The amount of award received was statistically related to retention. Krieger (1980), Silver (1978), and

Lenning and others (1980) support this finding.

Implications

If retention were a major emphasis of the financial aid office, then, the findings of this study would indicate which variables to examine before the allocation of federal financial aid programs. But, in view of the fact that equal opportunity and access to higher education are the real intent of the federal financial aid programs, some of the findings of this study might not really help the financial aid office now.

However, since retention is one of the major problems confronting postsecondary education today, the findings of this study are of great importance to institutions of higher education.

Recommendations

Additional information pertinent to student retention might be gained through further research. It is, therefore, recommended that a longitudinal study using the same research methodology be conducted in one or more countries classified as the states of the periphery, such as Nigeria.

Since the enrollment of part-time students is increasing in institutions of higher education, a study that examines how the needs of these students are met through the execution of the basic goals of the federal financial

aid programs and how these impact on their ability to persist to graduation is worthwhile.

Foreign students are a major blessing to the survivability of many American institutions of higher education. It is of great importance to examine what factors contribute to the high persistence level that these students exhibit and how these can be improved upon.

A closer look at the effects of financial aid packages on student retention, especially combined financial aid programs in a package is of great importance.

More research is needed to explain the relationship between parents' educational background and student retention.

REFERENCES

REFERENCES

Ashbaugh, J.; Levin, C.; and Zaccaria, L. Persistence and the disadvantaged college student. Journal of Educational Research, October 1973, 67, 64-66.

Astin, A. W. Financial aid and student persistence. Los Angeles, CA: Higher Education Research Institute, 1975. (ERIC Document Reproduction Service No. ED 112 804).

Astin, A. W. Four critical years. San Francisco, CA: Jossey-Bass Publishers, 1977.

Astin, A. W. Preventing students from dropping out. San Francisco, CA: Jossey-Bass Publishers, 1975.

Astin, A. W. Student persistence: Some stay, some don't--why? College and University, Summer 1973, 298-306.

Baber, Jr., B. B.; and Caple, R. B. Educational opportunity grant students; Persisters and nonpersisters. Journal of College Student Personnel, 1970, 11 115-119.

Baldridge, J. and Others. What is retention or success rate? College and University, Summer 1980, 55, 348-50.

Beal, P. E. and Noel, L. What works in student retention. A preliminary summary of a National Survey conducted jointly by the American College Testing Program and National Center for Higher Education Management Systems. Iowa: Colo: 1979. (ERIC Document Reproduction Service No. ED 180 348)

Bean, J. P. Dropouts and turnover: The synthesis and test of a causal model of student attrition. Paper presented at the annual meeting of the American Education Research Association. San Francisco, CA: April 8-12, 1979. (ERIC Document Reproduction Service No. ED 174 873)

Bennett, W. C. Dropouts, stopouts, and persisters: A Study of the retention process in higher education. (Doctoral Dissertation, Memphis State University, 1978). Dissertation Abstracts International, 1979, 39, 6561-A.

Blanchfield, W. C. College dropout identification: A case study. Journal of Experimental Education, 1971, 40, 1-4.

Brabant, S. and Garbin, A. P. Sex of student as defined by sex-typical experiences and persistence in higher education. Journal of College Student Personnel, January 1978, 17, 28-33.

Brewer, J. K. Everything you always wanted to know about statistics, but didn't know how to ask. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1978.

Bureau of student financial assistance bulletin. Washington, D.C.: Department of Health, Education and Welfare, 1979.

Cameron, S. M. and others. A study of community college BEOG recipients. 1978. (ERIC Document Reproduction Service No. ED 194 126)

Campbell, C. Predicting which freshmen will drop out: A measure of college persistence. 1980. (ERIC Document Reproduction Service No. ED 193 563)

Campbell, R. F.: Bridges, E. M. nad Nystrand, R. O. Introduction to educational administration. Boston, MA: Allyn and Bacon, Inc., 1977.

The Carnegie Council on Policy Studies in Higher Education. Next steps for the 1980's in student financial aid. San Francisco, CA: Jossey-Bass Publishers, Inc., 1979.

The Carnegie Council on Policy Stidies in Higher Education. Three Thousand Futures. San Francisco, CA: Jossey-Bass Publishers, 1980.

Cesa, T. A. Undergraduate leavers and persisters at Berkeley results of a telephone survey conducted in Spring: 1979. Berkeley: California Univerisity, 1980. (ERIC Document Reproduction Service No. ED 187 294)

Coker, D. C. Diversity of intellective and non-intellective characteristics between persisting and non-persisting students among campuses. Stevens Point: Wisconsin State University, 1968. (ERIC Document Reproduction Service No. ED 033 645).

Coles, H. W. III. College student perceptions four year follow-ups: 1973-77, characteristics of freshmen associated with retention. Buffalo: State University of New York, 1981. (ERIC Document Reproduction Service No. ED 200 125).

Cope, R. and Hannah W. Revolving college doors, New York: John Wiley and Sons, 1975.

Davis, H. L. A study regarding student financial aid packaging and academic progress in a community college. (Doctoral Dissertation, the George Washington University, 1978). Dissertation Abstracts International, 1978, 39, 2085-A.

Demitroff, J. F. Student persistence. College and University, Summer 1974, 49, 553-67.

Eaton, E. The phenomenon of student withdrawal at universities in Australia: A review of literature concerning factors associated with academic performance and discontinuance. (ERIC Document Reproduction Service No. ED 197 689).

Edwards, R. F. Why disadvantaged students drop out of college: An analysis of a federally sponsored program

to increase the retention and graduation rates of disadvantaged students (Doctoral dissertation, the University of Alabama, 1981) Dissertation Abstracts International, 1982, 42, 2523-A.

Federal Register. National direct student loan programs; College work-study program; and Supplemental educational opportunity grant program; Final regulations and proposed rulemaking. Washington, D.C.: U.S. Government Printing Office, 1981.

Federal Register. Pell grant; family contribution schedules. Washington, D.C.: U.S. Government Printing Office, 1981.

Felder, J., and Ring, D. Study of program management procedure in the basic grant and campus based programs: Analysis of the insancial aid programs using data collected in the institutional mail survey. Silver Spring, MD: Applied Management Sciences, Inc. 1980. (ERIC Document Reproduction Service No. ED 194 011)

Fidler, P. and Ponder, E. A comparative study of USC (University of South Carolina) student survival rates by race, 1973-78. Columbia, South Carolina University, 1977. (ERIC Document Reproduction Service No. ED 138 221)

Finn, Jr., C. E. Scholars, dollars and bureaucrats. Washington, D.C.: The Brookings Institute, 1978.

Five Federal financial aid programs, 1981-82. Washington, D.C.: U.S. Department of Education, 1981.

Friedman, N. The federal educational opportunity grant program: A status report, fiscal year 1970. New York: Columbia University, May 1971.

Gilmore, J.E. An analysis of selected factors of attrition and retention of freshmen at Sam Houston State College (Doctoral dissertation, University of Houston, 1968). Dissertation Abstracts International, 1969, 29, 2563-A.

Gottfredon, D. C. Personality and persistence in education: A longitudinal study. Baltimore, MD: John Hopkins University, Center for Social Organization of Schools, 1980. (ERIC Document Reproduction Service No. ED 195 911)

Gracia, S. A. and Seligsohn, H. C. Undergraduate black student retention revised. Educational record, Spring 1979, 59, 156-65.

Greer, L. R. Persistence and academic success among non-traditional age students at a junior college. Paper presented at the annual forum of the Association for Institutional Research. Atlanta, GA: April 27 - May 1, 1980. (ERIC Document Reproduction Service No. ED 189 942)

Haen, M. E. Persisters and non-persisters: A study of the 1973-1974 freshmen class at Kansas City Kansas Community College (Doctoral dissertation, University of

Kansas, 1975). Dissertation Abstracts International, 1976, 37, 147-A.

Halstead, D. K. Statewide planning in higher education, Washington, D.C.: U.S. Government Printing Office, 1974.

Hersey, P. and Blanchard, K. H. Management of organizational behavior. Englewood Cliffs, NJ: Prentice-Hall, 1977.

Hoffman, P. W. Comparative study of student retention and attrition at Manchester College (Doctoral dissertation, Purdue University, 1971). Dissertation Abstracts International, 1971, 32, 738-A.

Hook, J. Higher education being cut again in administration's budget for 1983. The Chronicle of Higher Education, 1982, 23, 11-12.

Howell, L. P. and others. Characteristics of student persisters and non-persisters at Old Dominion University. Norfolk, VA: Old Cominion University, 1979. (ERIC Document Reproduction Service No. ED 180 366)

Huber, W. H. Channeling students for greated retention. College and University, Fall 1971, 47, 19-29.

Irick, B. F. An analysis of factors related to the loss and retention of freshmen students at Tarleton State College for the academic years 1964 through 1966. (Doctoral diwsertation, Texas A&M University, 1969). Dissertation Abstracts International, 1969, 30, 928-A.

Iwai, S. I. and Churchill, W. D. College transfer attrition and parental expectations of academic success. College Student Journal, Summer 1979, 13, 126-32.

Jensen, E. L. Persistence in college: The impact of financial assistance to students. Paper presented at the annual meetings of the American Educational Research Association, April 7-11, 1980, Boston, MA. (ERIC Document Reproduction Service No. ED 185-939)

Johansson, C. B. and Rossmann, J. E. Persistence at liberal arts college: A replicated, five-year longitudinal study. Journal of Counseling Psychology, 1973, 20, 1-9.

Jones, Willie Otis. Academic performance and financial aid: A comparative analysis of financial aid students and non-financial aid students. Doctoral Dissertation, United States International University, 1978.

Kerlinger, F. N. Foundations of behavioral research. New York: Holt, Rinehart and Winston, Inc., 1973.

Kleinbaum, D. G. and Kupper, L. L. Applied regression analysis and other multivariable methods. North Scituate, Massachusetts: Duxburg Press, 1978.

Kohen, A. I.; Nestel, G. and Karmas, C. Factors affecting individual persistence rates in undergraduate college programs. American Educational Research Journal, Spring 1978, 15, 233-252.

Kohen, A. I.; and others. Success and failure in college:

A new approach to persistence in undergraduate programs. Columbus: Ohio State University, 1976. (ERIC Document Reproduction Service No. ED 124-053)

Krieger, T. B. A longitudinal study of the relationship between federal financial aid packaging and retention for the members of the freshmen class of 1974-1975 at Troy State University. Doctoral Dissertation, The Florida State University, 1980.

Lea, H. D.; Sedlacek, W. E.; and Stewart, S. S. Problems in retention research in higher education. Naspa Journal, Summer 1979, 17, 2-8.

Lenning, O. T. and others. Retention and attrition; Evidence for action and research. Boulder, Colo.: National Center for Higher Education Management Systems, 1980. (ERIC Document Reproduction Service No. ED 192-661)

Lenning, O. T.; Sauer, K. and Beal, P. E. Student retention strategies. Washington, D.C.: American Association for Higher Education, 1980. (ERIC Document Reproduction Service No. 200-118)

Lewis-Beck, M. S. Applied regression: an introduction. A Sage University Paper. Sage Publications, Inc. 1980.

Longanecker, D. and others. Federal assistance for postsecondary education: Options for fiscal year 1979. Washington, D.C.: Congressional Budget Office, 1980. (ERIC Document Reproduction Service No. ED 156-038)

McDermott, M. and Lichtenstein, P. A longitudinal study of the status of Hofstra freshmen classes five years after entry. New York: Hofstra University, 1974. (ERIC Document Reproduction Service No. ED 032-862)

Mock, K. R. and Younge, G. Students' intellectual attitudes, aptitude, and persistence at the University of California. Berkeley: California Univeristy 1969. (ERIC Document Reproduction Service No. ED 032-862)

Morrisey, R. J. Attrition in probationary freshmen. Journal of College Student Personnel, July 1971, 12, 279-285.

Morris, E. W. and others. Realities of retention: A program that works. College and University, Summer 1980, 56, 319-20.

Mullendore, R. H. A study of faculty and administration perceptions regarding faculty involvement in reducing student attrition in selected low and high attrition liberal arts colleges, (Doctoral dissertation, Michigan State University, 1980). Dissertation Abstracts International, 1981, 41, 4308-A.

Nelson, D. and others. Recruitment and retention of students through optimum financial aid packaging. College and University, Summer 1979, 54, 343-4.

Newlon, L. L. and Gaither, G. H. Factors contributing to attrition: An analysis of program impact on

persistence patterns. College and University, Spring 1980, 55, 237-51.

Nie, N; Hull, C. H.; Jenkins, J. G.; Steinbrenner, K; and Bent, D. H. Statistical package for the Social Sciences. New York: McGraw-Hill Book Company, 1975.

Noel, L. Student retention. College and University, Summer 1977, 52, 742-7.

Notestine, E. B. A comparative study of student retention and withdrawal in the school of humanitis, social science, and education at Purdue University. (Doctoral dissertation, Purdue University, 1969). Dissertation Abstracts International, 1969, 30, 1402-A.

Office of Student Financial Assistance. Student assistant educational amendments of 1980. Washington, D.C.: 1980. (ERIC Document Reproduction Service No. ED 194-027)

Pascarella, E. T. and Terenzini, P. T. Predicting freshman persistence and voluntary dropout decisions from a theoretical model. Journal of Higher Education, 1980, 51, 60-75.

Pedrini, B. C. and Pedrini, D. T. Evaluating experimental and control programs for attrition/persistence. Journal of Educational Research, 1978, 71, 234-7.

Pedrini, B. C. and Pedrini, D. T. Multivariate prediction of attrition/persistence for disadvantaged and control collegians. College Student Journal, Fall 1977, 11, 239-42.

Perry, Jr., F. Factors affecting academic performance and persistence among Mexican-American, Black and Anglo students. College Student Journal, Spring 1981, 15, 53-62.

Picciano, A. G. Student attrition/retention study at the College of Staten Island, 1979. New York: Staten Island Community College, 1980. (ERIC Document Reproduction Service No. ED 192-647)

Powell, O. B. A study of multiple characteristics of two classes of students admitted to The Florida State University under differing admissions policies, with special reference to academic achievement, retention and background characteristics. Doctoral Dissertation, The Florida State University, 1963.

Ramist, L. College student attrition and retention, New York: College Entrance Examination Board, 1981. (ERIC Document Reproduction Service No. ED 200-170)

Roberts, H. P. Academic performance and retention of the disadvantaged student with part-time employment--an exploratory study (Doctoral dissertation, Michigan State University, 1979). Dissertation Abstracts International, 1980, 40, 3680-A.

Rosenthal, W. Summer 1980 report of persistence-attrition of members of ethnic groups. Michigan State University: East Lansing Office of Institutional Research,

1980. (ERIC Document Reproduction Service No. ED 191-412)

Rosevalt, W. E. Comparative analysis of the attrition and retention rate of students who received the educational opportunity grant at the University of Oregon for the academic years 1969-70, 70-71, 71-72, and 72-73. (Doctoral dissertation, University of Oregon, 1975). Dissertation Abstracts International, 1976, 36, 5882-A.

Sanford, Timothy R. Predicting college graduation for black and white freshman applicants. Paper presented at the annual meeting of the Association for the Study of Higher Education. Washington, D.C.: March 3-4, 1981. (ERIC Document Reproduction Service No. ED 203-806)

Sanford, T. R. Retention and persistence data. Paper presented to the Inter-Institutional Research Groups of the Institute on Desegregation. Durham, N.C.: North Carolina Central University, 1980. (ERIC Document Reproduction Service No. ED 188 562)

Selby, J. E. Relationships existing among race, student financial aid and persistence in college. Journal of College Student Personnel, January 1973, 14, 38-40.

Selby, J. E. Relationship existing among race, persistence and student financial aids. Columbia: Missouri University, 1970. (ERIC Document Reproduction Service No. ED 045-051)

Silver, J. H. The effect of state and federal aid awards on persistence, academic success and chances for graduation among freshmen enrolling at North Greenville College in Fall, 1975. Doctoral Dissertation, Nova University, 1978. (ERIC Document Reproduction Service No. ED 158-791)

Slark, J. Longitudinal study of student flow and persistence. Report on second phase. CA: Santa Ana College, 1978. (ERIC Document Reproduction Service No. ED 158-825)

Smith, N. T. Student retention studies. College and University, Summer 1976, 51, 652-4.

Stoner, K. L. A five year analysis of factors affecting the retention of in-state freshmen admitted to the University of Tennessee from fall quarter of 1968 through summer quarter of 1973. (Doctoral Dissertation, University of Tennessee, 1979). Dissertation Abstracts International, 1980, 40, 4923-A.

Terenzini, P. T. and Pascarella, E. T. The role of students' backgrounds and levels of academic and social integration in college attrition: A test of a model. 1978. (ERIC Document Reproduction Service No. ED 152-186)

Thompson, M. Greater retention: Key for the 80's teaching-learning issues. Knoxville: Tennessee University,

1980. (ERIC Document Reproduction Service No. ED 188-526)

Tomali, G. and Behuniak, Jr., P. A longitudinal study of focus for control for male and female persisters and dropouts in four year colleges. Paper presented at the annual meeting of the American Educational Research Association. Los Angeles, CA: 1981. (ERIC Document Reproduction Service No. ED 201-273)

Tsai, Y. and Perry, Jr., F. Factors affecting academic performance and persistence among the Mexican-American, the Black and the Anglo students in a Southwestern university. Paper presented at the annual meeting of the Southwestern sociological Association. San Antonio, Texas: March 26-29, 1975. (ERIC Document Reproduction Service No. ED 104-613)

Turner, M. E. A comparative survey of some measures of academic achievement and retention rates of black students in two predominately white institutions of higher education. (Doctoral dissertation, Standford University, 1977). Dissertation Abstracts International, 1977/78, 38, 7072-A.

Wessell, Jr., T. R.; Engel, K. and Smidchens, U. Reducing attrition on the college campus. NASPA Journal, 1978, 16, 26-32.

West, E. D. Financial aid to the undergraduate. Washington, D.C.: American Council on Education, 1963.

Zaccaria, L. and Greaser, J. Factors related to persistence in an urban commuter university, Journal of College Student Personnel, July 1971, 12, 286-91.

Zanoni, C. P. The 1979-80 general college retention program, final report: Pilot Education Programs. Minneapolis: Minnesota University, 1980. (ERIC Document Reproduction Service No. ED 195-212)

APPENDICES

APPENDIX A

SUPPLEMENTAL TABLES AND ANALYSES

114

Mean, Standard Deviation, Minimum,

Maximum ACT Scores

	ACT
N	35
Mean	20.343
Standard Deviation	5.583
Minimum	10.000
Maximum	31.000

Mean, Standard Deviation, Minimum,

Maximum SAT Scores

	SAT
N	187
Mean	900.000
Standard Deviation	253.545
Minimum	2.000
Maximum	1460.000

Correlation between HSGPA and UGPA for a Four Year Academic Period

	GPA 1974-75			GPA 1975-76		
	r	p*	N	r	p*	N
HSGPA	.4804	.001*	127	.4455	.001*	261

	GPA 1976-77			GPA 1977-78		
	r	p*	N	r	p*	N
HSGPA	.3757	.001*	210	.3549	.001*	195

*p Statistically Significant (p .05)

When Pearson's correlation coefficients were computed, it was found that high school grade point average was statistically significant throughout the four academic years indicating that high school grade point average was a good predictor of undergraduate point average.

Mean, Standard Deviation, Minimum,
Maximum High School GPA

	HSGPA
N	348
Mean	2.928
Standard Deviation	.536
Minimum	1.300
Maximum	4.000

Mean, Standard Deviation, Minimum, Maximum UGPA
For a Four Year Academic Period

	Undergraduate Grade Point Average			
	1974-75	1975-76	1976-77	1977-78
N	192	401	325	266
Mean	2.343	2.702	2.781	2.771
Standard Deviation	.859	.597	.597	.531
Minimum	.202	.300	.181	.400
Maximum	4.000	4.000	4.000	4.000

Correlation between Age and Undergraduate GPS For a Four Year Academic Period

	GPA 1974-75			GPA 1975-76		
	r	p*	N	r	p*	N
AGE	.0615	.207	178	.0126	.403	385

	GPA 1976-77			GPA 1977-78		
	r	p*	N	r	p*	N
AGE	-.0279	.311	314	-.0338	.295	257

*p Statistically Significant (p .05)

In using Pearson Correlation Coefficients to ascertain the relationship between age and undergraduate grade point average, it was found that age was not statistically related to undergraduate grade point average throughout the four academic years.

Mean, Standard Deviation, Minimum, Maximum Age

	AGE
N	563
Mean	19.409
Standard Deviation	3.804
Minimum	16.000
Maximum	74.000

Mean, Standard Deviation, Minimum, Maximum Family Income

	FAMILY INCOME
N	466
Mean	8839.322
Standard Deviation	4823.102
Minimum	280.000
Maximum	35000.00

Mean, Standard Deviation, Minimum and Maximum Amount of Aid (In Dollars) For a Four Academic Year Period

	1974-75	1975-76	1976-77	1977-78
N	563	327	272	204
Mean	1074.00	1352.00	1599.00	1662.00
Standard Deviation	650.00	389.00	993.00	1056.00
Minimum	38.00	159.00	85.00	70.00
Maximum	3355.00	6160.00	5817.00	5269.00
Sum	604603.00	442009.00	434917.00	338959.00

APPENDIX B

LETTERS

Division of Academic Support Systems
The Florida State University
Tallahassee, Florida 32306

M E M O R A N D U M

TO : Ed Marsh

FROM: Paul R. Elliott

RE : Financial Aid Study

DATE: April 30, 1982

As per our discussion of April 29, I feel it is appropriate that you designate Mr. Odutola's study as one of importance and value to the Institution and to the Office of Financial Aid.

I would like you to effect a signed statement from Mr. Odutola indicating his understanding and agreement that in all data and all published or written materials no individual student can be identified in any manner (including social security number).

I trust he understands the importance of assuring this confidentiality of student information.

PRE:jw

cc: Charles Ruberg

Adeniji A. Odutola
P.O. Box 2024
Tally, Fla. 32304
5/11/82

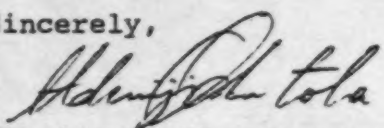
Mr. E. Marsh
Financial Aid Director
Florida State University
Tallahassee, Fla.

Dear Mr. Marsh:

I, Adeniji A. Odutola conducting a longitudinal study on the effects of demographic, academic, and financial aid factors on retention for the freshman class of 1974 at the Florida State University guarantee that data will be presented in an aggregate form only. Thus, each student is assured anonymity.

Thank you for your help and cooperation, I am

Sincerely,



Adeniji A. Odutola

cc: Dr. Paul R. Elliott

Adeniji A. Odutola
P.O. Box 2024
Tallahassee, FL 32304
5/26/82

Mrs. Ilona Turrisi
Budget and Analysis
The Florida State University
Tallahassee, Fla.

Dear Mrs. Turrisi:

I was in a conference with Mrs. Betty Tilton today who suggested that I write a letter identifying the specificities of the data I need from your office.

My dissertation is a longitudinal study of the effects of academic, demographic and financial aid factors on retention for the freshman class of 1974 at The Florida State University. The Financial Aid Office has been very generous to furnish me data on demographic and financial aid factors.

I will be most grateful if your office can provide me the following academic data: ACT scores, SAT scores, GPA for each academic year from Fall 1974 to Spring 1978, cumulative undergraduate GPA, high school GPA, and year of graduation for the federal financial aid recipients in the freshman class of 1974.

The aforementioned population has been identified. Enclosed herewith, however, is the social security numbers of the students in this population.

My appreciation for your help and cooperation, I am

Sincerely,

Adeniji A. Odutola

VITA

VITA

Adeniji A. Odutola, son of Mr. Gabriel Gbadebo Odutola and Mrs. Victoria (Oregbesan) Odutola was born in Lagos, Nigeria, on June 30, 1954. He received his elementary and high school education in Lagos, Nigeria.

September 1974, he started his undergraduate education at the College of William and Mary. By 1977-78 academic year, he was one of the students elected to Who's Who Among Students in American Universities and Colleges. He concentrated in Fine Arts and minored in Anthropology. He finished the necessary requirements for the Bachelor of Arts degree in three and half years. He was one of the students President and Mrs. Thomas Graves gave graduation presents for effective leadership of the organizations they were presidents of, and for having represented College of William and Mary well during their educational socialization process.

He entered Virginia State University in September, 1978. Summer 1979, he was awarded a Master of Education degree in Industrial Education. September 1979, he started a doctoral program in Higher Education at the Florida State University. He was recommended for

membership in Phi Delta Kappa, an international honor fraternity for educators. He was awarded the Doctor of Philosophy degree in Higher Education in August, 1983.